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City Council of Gibraltar.

ANNUAL REPORT

ON THE

HEALTH OF GIBRALTAR

FOR THE YEAR

1928

BY

Lieut.-Colonel W. C. SMALES, D.S.O.. R.A.M.C.,
Medical Officer of Health.

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} End of Report

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†Major J. B. FOTHERINGHAM, M.B., R.A.M.C.

---

*Allowance paid to a private medical practitioner as a retaining fee for his services.

†Allowance paid to an Officer of the R.A.M.C. for medical services at North Front District.

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H.E. the Governor.

The Hon. Colonial Secretary.
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Principal Medical Officer (Naval).
Captain of the Port.
Port Surgeon.
Surgeon Colonial Hospital.
Medical Officer of Health.
Chairman of the City Council.
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PREFACE.

The General Health of Gibraltar during the year has been satisfactory.

With the exception of Measles, the prevalence of Infectious Disease has been low.

Measles occurred in epidemic form, though the type was mild.

There was no case of Small Pox or of Undulant Fever during the year.

The Infantile Mortality rate has again risen, and is 122 per 1,000 births for the year.

Special thanks are due to those who have contributed to the preparation of this Report, and to the Local Press for their continued assistance.

W. C. SMALES,
Lieut-Colonel,
Medical Officer of Health.

CITY COUNCIL OF GIBRALTAR.

PUBLIC HEALTH DEPARTMENT.

SUMMARY OF VITAL STATISTICS FOR 1928.

Total area of Gibraltar Territory	1,387 acres, 2 roods, 3 poles.
Area of the City	104 acres, 3 roods, 33 poles.
Estimated Total Civil Population of Gibraltar	16,831 persons.
Estimated Fixed Civil Population of Gibraltar	15,719 persons.
Births in Fixed Civil Population	212 Males. 154 Females.
Total Births	366
Birth rate per 1,000 of Fixed Civil Population	23·28
Deaths in Civil Population	162 Males 131 Females
Total Deaths...	293
Crude death rate per 1,000 of Total Civil Population	17·40
Average crude death rate for previous 10 years	17·17
Standardised death rate corrected for age and sex distribution	20·47
Death rate from Pulmonary Tuberculosis ...	1·6 per 1,000
Infantile Mortality rate	122·9 per 1,000 births.

GENERAL CONSIDERATION.

Gibraltar is a narrow peninsular running North and South. It consists of a high mountain called the "Rock" and of a flat sandy plain known as the North Front: the Neutral Territory connects it with Spain.

The Rock is of limestone formation, overlaid on the West with dark shale and covered with a layer of more recent geological formation in parts of limestone breccia or angular limestone blocks, in parts of sandstone or sand.

It is 1,396 feet above the sea level at its highest point, and some 2½ miles long. The North Front plain is about ½ mile in length and some 10 feet above the sea level.

The total acreage of Gibraltar territory is 1,387 acres, 2 roods, and 3 poles, or about 2⅙ square miles.

The town proper or City of Gibraltar occupies an area some ¾ of a mile in length of 104 acres, 3 roods, 33 poles at the foot of the Rock on its lower North-Western slope.

The Neutral territory is an isthmus of some 1,500 yards long and from 1,000 to 1,800 yards wide through which runs the main road to Spain.

The Spanish city of La Linea is situated at the North of the Neutral territory and immediately adjoining it.

The only civil habitations on the East side of the Rock are at Catalan Bay village.

The rateable value of Gibraltar is £286,101 15 0 and a penny rate produces £1,192 1 9.

The Public Health Administration of Gibraltar is vested in the City Council and in the Board of Health.

The City Council are the authority for carrying out the provisions of the Public Health Ordinance relating to Water Supply, Sewerage, Prevention of Disease, General Sanitation of Gibraltar territory and the Vaccination Ordinance. The Board of Health deals with matters of sanitation arising in the port.

The Civil Hospital, Isolation Hospital, Midwives' Ordinance, Medical Work in connection with the Port, Schools, and Inspection of Foodstuffs are administered by the Colonial Authorities.

METEOROLOGICAL OBSERVATIONS FOR THE YEAR 1928.

Latitude 26° 6′ N. Longitude 5° 21′ W.

Instruments verified at the National Physical Laboratory, Kew.

The Meteorological Station is situated in an obsolete bastion on the fortifications on the South-West side of the Rock, the height of the ground being 50 feet above mean sea level. Here all the instruments (except the anemometer) are kept.

The shade thermometers, kept in a Stevenson screen are: one self-recording maximum, one self-recording minimum, a dry and wet bulb. A self-recording grass thermometer is used for registering the temperature on the grass.

The rain gauge is an 8 inch copper meteorological pattern.

The anemometer is fixed in Victoria Gardens, North Front, on the isthmus which joins Gibraltar to the mainland, and clear of the Rock to avoid eddies.

A report is sent twice daily to the Meteorological Office, London, and daily to the *Gibraltar Chronicle* for general information. A complete monthly report is also sent to the Meteorological Office, London, for publication in their journals.

The report contains statistics showing the means for the year in barometric pressure, air temperature, rainfall, humidity, cloud and wind, compared with the averages for a series of years, number of days of clear sky, overcast days, and days on which rain fell during the year. Readings are taken every day throughout the year at the 7th, 13th, 18th, and 21st hour, but the following tables are compiled from the readings at the 7th, 13th, and 21st hours only.

NOTABLE FEATURES OF THE WEATHER OF 1928.

JANUARY was fine, warm, and sunny with only two wet days, and 13 days with clear sky, there were strong North-Westerly winds, especially on the 4th and 29th.

FEBRUARY was also fine and warm, with less than the usual rainfall, most of the total, 3·22 inches fell, in the last four days, very high barometer during the first two weeks.

MARCH though warm was very unsettled, with twenty days on which rain fell, and strong Westerly winds, a heavy thunderstorm on the 8th with the only fall of hail during the year.

APRIL though below the average in rainfall, was not quite so fine a month as usual, much cloudy sky, with showers, and fairly strong Westerly winds, a heavy thunderstorm on the 18th with high winds on the 7th and 15th.

MAY was cool, the temperature being 2′ 4° below, and rainfall ·20 inches above the average, with a thunderstorm on the 28th and moderate Westerly winds. A sun pillar was observed on the evening of the 24th, this is a phenomenon very rarely seen in Gibraltar.

JUNE normal in temperature, with very little rain, the 6th being the only wet day, an unusual amount of levanter during the latter half of the month.

JULY very hot and dry, the highest shade temperature for many years, 99°, being recorded on the 27th, no rain fell during the month, there was much East wind, without however the usual heavy cloud, no day was recorded as overcast, and there were twelve days with clear sky.

AUGUST again had the highest average temperature; the whole month was unusually hot and dry, with light winds and fourteen days clear sky, much less levanter than usual.

SEPTEMBER above the average in temperature and rainfall. Heavy rain and thunder during the last three days of the month.

OCTOBER was warm and dry, with light winds, and the usual periods of levanter.

NOVEMBER very wet and stormy during the first week with a strong gale on the 7th and the wettest day of the year on the 6th, dry during the rest of the month, with moderate Westerly winds and sunny days.

DECEMBER normal temperature, but only half the usual rainfall, wet and windy during the second week, and at the close.

RAINFALL.

Rain Season 1927-28	36·64 inches
Rainfall for the year 1928	25·44 ,,
Number of days on which 0·1 inch of rain or more fell	88
Number of days on which 0·4 inch of rain or more fell	64
Highest recorded temperature in the screen...	99° on the 27th July

Lowest recorded temperature in the screen...	42° on the 1st January
Mean temperature for the year	64·7°
Mean humidity	74%
Lowest temperature on the grass	35° on the 1st and 21st Jan., 6th February
Wettest day	2·46 inches on the 6th Nov.
Mean amount of cloud for the year	4·2
Number of days of clear sky	93
Number of days of overcast sky	42
Number of days with thunderstorm	10
Number of occasions when hail fell	1
Number of gales (including gale gusts) ...	9
Number of days of fog	2
Number of frosts...	0

BAROMETER. The mean barometric reading for the year was 30·070 when reduced to sea level and to a temperature of 32° F. The highest corrected reading of the year was 30·663 on the 8th January, and the highest corrected monthly mean 30·282 February. The lowest corrected reading of the year was 29·581 on the 11th December and the lowest corrected monthly mean 29·953 April.

TEMPERATURE. The mean temperature for the year was 64·7° which was 0·6° above the average for 40 years. The highest shade temperature recorded for many years, 99°, was experienced on the 27th July.

WIND. The prevailing winds were again Westerly, the force was rather above the average, and gale force was reached on nine occasions.

RAINFALL. The rainfall for the year was 10·07 inches below the average, November was the wettest month with 7·06 inches, and November 6th the wettest day, 2·46 inches.

HUMIDITY. The mean relative humidity of the atmosphere (percentage of saturation of the air) was normal for the year. As will be seen by the reference table the average humidity is fairly heavy, though considerable variations occur, sometimes as much as 68%.

These details and comparative tables of the Meteorology of Gibraltar are given in the Annual Meteorogical Report of Gibraltar by Mr. Henry Bentley, Public Works Department, Meteorological Observer.

TABLE I.

Month	Barometric pressure reduced to sea level & 32° Fahr.	Maximum and Minimum Temperatures.			Difference from average for 40 years.	Maximum date.	Minimum date.
		Maximum	Minimum	Mean			
Jan.	30·237	60·4	49·6	53·0	+ 0·2	67—18th	42—1st
Feb	30·282	60·9	51·8	56·3	+ 0·4	66—15th	44—5th 6th
Mar.	29·988	63·1	53·7	58·4	+ 0·9	72—29th	47—1st 14th
April	29·953	66·4	54·7	60·5	— 0·5	71—16th	51—17th
May	29·966	69·0	57·1	63·1	— 2·4	79—30th	52—23rd
June	30·011	76·5	64·9	70·7	+ 0·2	85—20th	60—3rd 19th
July	30·053	83·0	71·5	77·3	+ 2·5	99—27th	63—1st
Aug.	29·977	85·0	70·7	77·9	+ 1·9	95—13th	63—30th
Sept.	29·999	81·0	69·1	75·1	+ 2·6	88—2nd	62—18th
Oct.	30·053	72·5	61·7	67·1	+ 1·0	81—16th	52—30th
Nov.	30·170	65·5	54·5	60·0	— 0·5	73—17th	48—13th
Dec.	30·151	60·6	51·0	55·8	— 0·2	68—16th	44—23rd
Year..	30·070	70·3	59·2	64·7	+ 0·6	99—27th July	42—1st January

TABLE II.

Month.	Shade Temperature.			Humidity.		
	7th hour.	13th hour.	21st hour.	7th hour.	13th hour.	21st hour.
January ..	51·0	59·1	53·4	77	62	73
February...	52·8	59·7	55·8	84	71	78
March	54·8	61·3	57·3	84	67	78
April	56·1	64·1	58·9	80	63	76
May	58·3	66·8	61·5	81	58	72
June	66·3	74·0	68·7	82	63	76
July	73·0	79·8	75·0	75	62	72
August ..	72·6	81·9	75·6	79	59	71
September	70·2	78·4	73·2	84	64	79
October	62·6	71·4	65·6	82	64	76
November .	55·3	64·2	57·9	81	64	77
December..	52·5	59·5	54·6	82	69	80
Year	60·5	68·4	63·1	81	64	76

TABLE III.

Month	Terrestrial Radiation. Temperature on the grass. Mean	Min.	Date.	Solar Radiation. Black bulb in vacuum. Mean	Max.	Date.
January ...	43·5	35	1st 21st	97	117	24th
February...	46·8	35	6th	93	122	14th
March	50·0	42	15th	101	125	27th
April........	50·4	45	2nd 17th	107	129	16th
May..........	54·6	48	23rd	115	132	11th
June.........	63·2	57	8th 11th	120	138	27th
July.........	69·0	61	10th	124	145	27th
August. ...	66·9	59	20th 30th	125	143	2nd 3rd
September	65·9	57	18th	118	140	19th
October....	57·4	47	30th	110	131	1st
November..	49·8	43	11th 13th	102	122	17th
December..	45·9	37	23rd	92	116	16th
Year	55·3	35	1st and 21st Jan., 6th Feb.	109	145	27th July

TABLE IV.

Month.	Cloud amount 0–10. 7th hour.	13th hour.	21st hour.	Clear sky days. Less than 0·2 cloud.	Overcast days. More than 0·8 cloud.
January ..	2·4	3·8	2·6	13	1
February ..	5·0	5·5	4·8	9	10
March	6·4	5·9	4·8	4	8
April........	5·2	6·0	4·6	3	4
May	4·6	4·6	4·7	4	4
June.........	4·6	2·8	2·7	7	1
July...	2·6	3·0	1·7	12	—
August ..	3·6	2·2	2·9	14	2
September	5·8	4·7	3·3	7	2
October ...	4·5	4·2	4·0	6	3
November	4·4	4·2	3·5	8	3
December..	5·2	5·1	4·0	6	4
Year	4·6	4·3	3·6	93	42

TABLE V.

Month.	Rainfall.		Greatest fall in 24 hours beginning at 7 a.m.		Number of days with 0·1 inches or more.	Number of days with 0·4 inches or more.	Rain Season. 1927-28	
	Total inches.	Deviation from average for 40 years.	Inches.	Date.			Month.	Total fall inches.
Jan.	0·37	−4·64	0·24	29th	7	2	Aug. ...	0·07
Feb	3·22	−0·95	1·24	27th	7	6	Sept. ...	0·29
March ...	4·47	−0·30	1·59	20th	20	14	Oct. ...	3·48
April ...	1·79	−0·95	0·94	5th	12	8	Nov ...	6·50
May......	1·93	+0·20	0·56	4th	13	10	Dec. ...	14·49
June......	0·13	−0·34	0·13	6th	1	1	Jan. .	0·37
July	—	−0·04	—	—	—	—	Feb. ...	3·22
August...	0·03	−0·08	0·03	31st	1	—	Mar. ...	4·47
Sept. ...	2·68	+1·30	2·00	28th	8	7	April ...	1·79
October..	0·71	−2·50	0·43	2nd	5	4	May ...	1·93
Nov......	7·06	+0·67	2·46	6th	6	6	June ..	0·13
Dec.......	3·05	−2·44	1·51	31st	8	6	July ...	—
Year	25·44	−10·07	2·46	6th Nov.	88	64	Rain Season .	36·64

TABLE VI.

Month.	Winds obs. at 7-13-21 hr. 1098=year.								Calm.	Force 1—3	Force 4—7	Force 8 or more
	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.				
January ..	5	5	15	3	—	7	26	32	—	23	70	—
February...	2	2	30	7	2	15	21	7	1	17	69	—
March	—	1	20	7	3	13	32	16	1	26	66	—
April	2	2	8	11	1	22	31	13	—	30	60	—
May	1	1	16	2	2	24	32	15	—	28	65	—
June.........	—	2	38	5	4	27	10	1	3	38	49	—
July	—	11	46	10	4	16	3	1	2	60	31	—
August	—	1	33	2	—	28	19	8	2	71	20	—
September.	—	2	28	7	3	30	14	1	5	65	20	—
October ..	1	3	19	6	2	21	21	15	5	60	28	—
November	5	5	12	5	2	20	25	14	2	50	38	—
December...	—	2	26	5	2	12	23	20	3	47	43	—
Year.........	16	37	291	70	25	235	257	143	24	515	559	—

VITAL STATISTICS.

An estimate by the Police Authorities at the end of 1928, forms the basis on which the various rates connected with the vital statistics have been calculated in this report.

Data concerning the Naval and Military population are not included in this report.

1. POPULATION.

The total Civil population is estimated at 16,831 persons, of which number 15,628 are British subjects other than Maltese, 91 British subjects born in Malta, 1,012 aliens resident in the Town and 100 aliens resident in the Bay.

The following table shows the fluctuation in population of Gibraltar during recent years :—

How estimated.	British Subjects Fixed Population.	Alien Subjects Floating Population.	Total Population.
Census April 1911	17,021	2,565	19,586
Police Estimate at end of 1913	16,147	2,301	18,448
Police Estimate at end of 1914	16,086	1,950	18,036
Police Estimate at end of 1915	16,163	1,780	17,943
Police Estimate at end of 1916	16,499	1,947	18,446
Police Estimate at end of 1917	16,549	1,977	18,526
Police Estimate at end of 1918	16,096	1,867	17,963
Police Estimate at end of 1919	16,040	1,733	17,773
Police Estimate at end of 1920	16,181	1,509	17,690
Census June 1921	16,753	1,787	18,540
Police Estimate at end of 1922	16,182	1,145	17,327
Police Estimate at end of 1923	16,165	1,181	17,346
Police Estimate at end of 1924	16,177	1,147	17,324
Police Estimate at end of 1925	16,127	1,161	17,288
Police Estimate at end of 1926	16,150	1,013	17,163
Police Estimate at end of 1927	16,120	1,076	17,196
Police Estimate at end of 1928	15,719	1,112	16,831

VITAL STATISTICS DURING 1928 AND PREVIOUS TEN YEARS.

Year	Population.			Deaths				Infantile Mortality.		Births.		Zymotic Mortality.	
	Fixed.	Total.	How Estimated	Fixed population. No.	Total population. No.	Rate per 1,000 of population.		No.	Rate per 1,000 birth.	No.	Birth rate per 1,000 living of Fixed population	No.	Rate per 1,000 living of Fixed population.
						Fixed population.	Total population						
1918	16096	17963	Police Estimate	386	400	23·98	22·26	49	124·3	394	24·47	8	0·45
1919	16040	17773		308	318	19·20	17·89	43	107·7	399	24·9	21	1·18
1920	16181	17690		297	308	18·72	17·45	48	128	375	23·2	20	1·13
1921	16753	18540	Census 1921	282	292	15·74	16·83	44	102·5	429	25·6	33	1·78
1922	16182	17327	Police Estimate	298	304	18·40	17·54	38	103·8	366	22·6	27	1·56
1923	16165	17346		285	294	17·63	16·95	40	109·5	365	22·57	32	1·84
1924	16177	17324		250	254	15·45	14·66	33	91	360	22·25	18	1·05
1925	16127	17288		249	256	15·44	14·80	31	83	372	23	10	0·52
1926	16150	17163		271	276	16·78	16·08	46	107	427	25	20	1·2
1927	16120	17196		291	297	18·05	17·27	36	99·1	363	22	13	0·8
1928	15719	16831		286	293	18·19	17·40	45	122·9	366	23·28	30	1·7

These figures represent the population of Gibraltar between the hours of 10 p.m. and 5·30 a.m. To calculate the daily population it will be necessary to add some 5,000 aliens and 1,500 British subjects residing at La Linea who come into Gibraltar daily.

The age and sex incidence of the population of Gibraltar in 1928, is as follows:—

	Persons of ten years of age and over.		Persons under 10 years of age.	
	Males.	Females.	Males.	Females.
British Subjects	5,161	6,116	2,136	2,215
Maltese	75	16		
Aliens in the Bay	100			
Aliens in the Town	240	772		
Totals	5,576	6,904	2,136	2,215

Total Males 7,712; Females 9,119.

2. DEATHS.

The number of deaths registered for the Civil population of Gibraltar during the year was 293, in addition to 29 persons who died after being landed from shipping in the Bay or brought into the Town for treatment.

Two hundred and eighty-six deaths occurred amongst British subjects and seven amongst resident aliens.

The crude death rate per 1,000 of the fixed population is 18·19, that of the total population 17·40.

The standardised death rate of the total population, obtained by multiplying the crude death rate by the factor 1·177 is 20·47.

The following table shows the crude death rate for the past 10 years:—

Year	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Fixed Population	19·20	18·72	15·74	18·40	17·63	15·45	15·44	16·78	18·05	18·19
Total Population	17·89	17·45	16·83	17·54	16·95	14·66	14·80	16·08	17·27	17·40

3. MONTHLY AND QUARTERLY MORTALITY.

The highest number of deaths occurred in February, and the lowest in June.

The death rate during the first quarter of the year was the highest and that of the second the lowest.

The number of deaths registered each month was as follows :—

January......	32	April......	25	July...........	26	October... ..	26
February ...	36	May	20	August	34	November...	22
March	31	June	13	September...	27	December...	30
	99		58		87		78

These figures include cases landed from shipping in the Bay or cases brought into the Town for treatment.

Causes of death in Civil population in 1928 according to the International Abbreviated List, with Age and Sex incidence.

Cause of Death.	All Ages	Under 1 year.		1 year and under 2.		2 years and under 5.		5 years and under 15.		15 years and under 25.		25 years and under 45.		45 years and under 65.		65 years and over.		Deaths in Institutions.
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
1. Enterie Fever	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1
5. Measles	11	3	—	3	4	1	—	—	—	—	—	—	—	—	—	—	—	3
7. Whooping Cough	6	—	5	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
8. Diphtheria and Croup ...	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1
9. Influenza	3	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	1	—
12. Other epidemie diseases...	2	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	—
13. Phthisis (Pulmonary Tubereulosis)	26	—	—	—	—	1	—	—	1	6	1	1	2	10	2	2	—	7
14. Tuberculous Meningitis...	6	—	—	—	—	1	1	1	2	—	1	—	—	—	—	—	—	1
15. Other Tubereulous diseases	2	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	1
16. Cancer, Malignant disease	21	—	—	—	—	—	—	—	—	—	—	1	—	6	3	7	4	4
17. Meningitis	5	1	—	—	2	—	—	—	2	—	—	—	—	—	—	—	—	2
18. Cerebral Hæmorrhage and Softening	14	—	—	—	—	—	—	—	—	—	—	—	—	2	1	7	4	3
19. Organic Heart Disease ...	19	—	—	—	—	—	—	—	—	—	—	1	1	3	4	6	4	3
20. Aeute Bronchitis	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—
21. Chronie Bronehitis ...	11	—	—	—	—	—	—	—	—	—	—	—	—	5	1	4	1	2
22. Pneumonia ... ..., ...	30	4	2	4	1	—	2	1	1	1	—	2	1	3	2	2	4	7
23. Other diseases of respiratory system ...	3	—	—	—	—	—	1	—	—	—	—	—	—	1	—	—	1	1
24. Diseases of the Stomach..	3	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	1	3
25. Diarrhœa and Enteritis (under 2 years)	11	4	6	—	1	—	—	—	—	—	—	—	—	—	—	—	—	4
26. Appendicitis & Typhlitis	2	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	2
27. Hernia Intestinal obstruction	5	—	—	—	—	—	1	—	—	—	—	—	—	—	—	2	2	4
29. Acute Nephritis and Bright's Disease ...	10	—	—	—	—	—	—	—	—	—	—	2	2	1	3	—	2	1
33. Congenital Debility and Malformation (including premature birth)...	14	10	2	2	—	—	—	—	—	—	—	—	—	—	—	—	—	2
34. Senility	25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11	14	15
35. Violent Death (exeluding Suieides)	6	—	—	1	—	—	—	—	—	1	1	—	—	3	—	—	—	5
37. Other defined diseases ...	52	2	4	-	—	2	3	—	—	—	2	2	—	11	8	12	6	17
38. Diseases ill-defined or unknown	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	1
Totals	293	25	20	10	9	5	9	2	6	8	5	10	8	48	26	54	48	91

DEATHS REGISTERED IN THE CITY OF GIBRALTAR DURING THE YEAR 1928.

(Civil Population).

Cause of Death.	Sex.		Ages.								Districts.			Public Institutions.					
	Males.	Females.	Under 1 year.	1 year & under 2.	2 years & under 5.	5 years & under 15.	15 years & under 25.	25 years & under 45.	45 years & under 65.	65 years & over.	North.	Central.	South.	Colonial Hospital.	Gibraltar Home for Sick and Aged.	Little Sisters of the Poor.	Lunatic Asylum.	Gavino's Asylum.	Beriro's Home.
ALL CAUSES.	162	131	45	19	14	8	13	18	74	102	3	258	32	69	3	11	3	5	...
I.—Epidemic, Endemic and Infectious Diseases	32	28	9	8	6	5	8	4	16	4	...	57	3	14	2	...	...	1	...
II.—General Diseases not included in I	20	10	...	...	...	...	...	1	15	14	1	26	3	6	...	1	...	...	...
III.—Diseases of the Nervous System and Sense Organs	18	14	4	3	...	1	1	1	7	15	...	30	2	7	...	...	1	...	...
IV.—Diseases of the Circulatory System	18	16	..	...	...	...	...	3	13	18	...	29	5	3	...	...	...	1	...
V.—Diseases of the Respiratory System	28	17	6	5	3	1	1	3	12	14	2	40	3	10	...	...	...	...	...
VI.—Diseases of the Digestive System	12	16	10	1	4	1	1	2	3	6	...	28	...	16	...	...	...	1	...
VII.—Non-Venereal Diseases of the Genito-Urinary System and Annexa	5	7	...	...	...	...	...	4	5	3	...	8	4	1	...	...	...	...	...
VIII.—The Puerperal State	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
IX.—Diseases of the Skin and Cellular Tissue	2	...	...	...	...	...	...	...	1	1	...	2	...	1	...	...	...	...	...
X.—Diseases of the Bones and Organs of Locomotion	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
XI.—Congenital Malformations	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...
XII.—Diseases of Early Infancy	12	5	15	2	...	...	...	...	...	...	...	16	1	5	...	...	...	...	...
XIII.—Old Age	11	14	...	...	...	...	...	...	...	25	...	14	11	...	1	10	2	2	...
XIV.—External Causes	3	1	...	...	...	...	2	...	2	...	...	4	...	4	...	...	...	...	...
XV.—Ill-Defined Diseases	...	3	...	...	1	...	...	...	...	2	...	3	..	1	...	...	...	...	...
I.—Enteric Fever	..	1	..	..	..	..	..	1	..	..	..	1	..	1	..	..	..	..	..
Measles	7	4	3	7	1	..	..	..	..	..	..	11	..	3	..	..	..	..	..
Whooping Cough	..	6	5	1	..	..	..	..	..	..	..	6	..	1	..	..	..	..	..
Diphtheria	..	1	..	..	1	..	..	..	..	..	..	1	..	1	..	..	..	..	..
Influenza	1	2	1	..	..	..	..	..	1	1	..	3	..	..	..	..	..	..	..
Erysipelas	..	2	..	..	..	..	..	..	1	1	..	2	..	..	..	..	..	..	..
Meningococcal Meningitis	..	1	..	..	..	1	..	..	..	..	..	1	..	1	..	..	..	..	..
Tuberculosis—Respiratory System	20	6	..	..	1	1	7	3	12	2	..	23	3	4	2	..	..	1	..
Central Nervous System	2	4	..	..	2	3	1	..	..	..	..	6	..	1	..	..	..	..	..
Vertebral column	1	1	..	..	..	..	..	..	2	..	..	2	..	1	..	..	..	..	..
Purulent Infection, Septicæmia	1	..	..	..	1	..	..	..	..	..	..	1	..	1	..	..	..	..	..
II.—Cancer—Buccal cavity	3	..	..	..	..	..	..	..	2	1	..	3	..	2	..	..	..	..	..
Pharynx oesophagus, stomach, liver and annexa	3	3	..	..	..	..	..	..	2	4	1	5	..	..	..	..	..	..	..
Peritoneum, intestines & rectum	2	1	..	..	..	..	..	..	2	1	..	3	..	1	..	..	..	..	..
Female genital organs	..	1	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..
Breast	..	1	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..
Other or unspecified organs	6	1	..	..	..	..	..	1	2	4	..	6	1	..	..	1	..	..	..
Rheumatic Fever	1	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..
Chronic Rheumatism, Osteo-arthritis, Gout	1	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..
Diabetes	2	3	..	..	..	..	..	..	4	1	..	4	1	..	..	..	..	..	..
Anæmia, Chlorosis	1	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..
Leukæmia, Lymphadenoma	1	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..
III.—Encephalitis	1	..	..	1	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..
Meningitis	1	3	1	2	..	1	..	..	..	..	..	4	..	1	..	..	..	..	..
Tabes dorsalis (locomotor ataxy)	1	..	..	..	..	..	...	1	..	..	..	1	..	..	..	..	..	..	..
Cerebral Hæmorrhage, Apoplexy, &c.	9	5	..	..	..	..	..	..	3	11	..	13	1	3	..	..	..	..	..
Paralysis of unstated origin	4	3	..	..	..	..	..	..	3	4	..	6	1	1	..	..	1	..	..
Epilepsy	..	1	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..
Convulsions	1	2	3	..	..	..	..	..	..	..	..	3	..	1	..	..	..	..	..
Other diseases of the nervous system	1	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..
IV.—Angina pectoris	1	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..
Other diseases of the heart	11	11	..	..	..	..	...	2	10	10	..	19	3	3	..	..	..	1	..
Diseases of the arteries	5	5	..	..	..	..	..	..	2	8	..	9	1	..	..	..	..	..	..
Hæmorrhage without stated cause	1	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..
V.—Bronchitis	10	2	..	..	..	..	..	..	6	6	..	11	1	2	..	..	..	..	..
Bronco-Pneumonia	11	11	6	5	2	1	..	..	2	6	1	21	..	3	..	..	..	..	..
Pneumonia (lobar or not otherwise defined)	6	1	..	..	..	..	1	3	3	..	..	6	1	4	..	..	..	...	..
Pleurisy	..	1	..	..	1	..	..	..	..	..	..	1	..	1	..	..	..	..	..
Congestion and hæmorrhagic infarct of lung	..	1	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..
Gangrene of the Lung	1	..	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..
Pulmonary emphysema	..	1	..	..	..	...	..	..	..	1	1	..	..	..	..	..	..	..	..
VI.—Diseases of the pharynx and tonsils	1	1	..	..	..	1	1	..	..	..	..	2	..	1	..	..	..	..	..
Ulcer of the stomach or duodenum.	2	..	..	..	..	..	..	..	1	1	..	2	..	1	..	..	..	..	..
Other diseases of the stomach	..	2	1	..	..	..	..	..	..	1	..	2	..	1	..	..	..	1	..
Diarrhœa and Enteritis	5	7	9	1	2	..	..	..	..	..	..	12	..	3	..	..	..	..	..
Appendicitis	1	1	..	..	..	..	..	..	..	..	..	2	..	2	..	..	..	..	..
Hernia, Intestinal obstruction	2	3	..	..	1	..	..	2	..	4	..	5	..	4	..	..	..	..	..
Acute yellow atrophy of the Liver	1	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..
Other diseases of the Liver	..	2	..	..	1	..	..	..	1	..	..	2	..	2	..	..	..	..	..
VII.—Acute Nephritis	..	2	..	..	..	..	..	..	1	..	..	..	2	..	..	..	..	..	..
Chronic Nephritis	3	5	..	..	..	..	..	1	3	2	..	7	1	1	..	..	..	..	..
Diseases of the bladder	2	..	..	..	..	..	..	3	1	1	..	1	1	1	..	..	..	..	..
IX.—Gangrene	1	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..
Carbuncle, boil	1	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..
XI.—Other congenital malformations	1	..	1	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..
XII.—Congenital debility, sclerema and icterus	6	2	6	2	..	..	..	..	..	..	..	7	1	1	..	..	..	..	..
Premature birth, injury at birth	5	1	6	..	..	..	..	..	..	..	..	6	..	1	..	..	..	..	..
Other diseases peculiar to early infancy	1	2	3	..	..	..	..	..	..	..	..	3	..	3	..	..	2	2	..
XIII.—Old Age	11	14	..	..	..	..	..	..	..	25	..	14	11	..	1	10	..	..	..
XIV.—Violent death, excluding suicide and homicide	3	1	..	..	..	..	2	..	2	..	..	4	..	4	..	..	..	..	..
XV.—Cause of death unstated or ill-defined	..	3	..	..	1	..	..	..	..	2	..	3	..	1	..	..	..	..	..
Males	162	—	25	9	5	2	8	10	48	55	—	114	18	39	2	5	2	1	—
Females	—	131	20	10	9	6	5	8	26	47	3	114	14	30	1	6	1	4	—

MATERNITY AND CHILD WELFARE.

Maternity and Child Welfare Work has continued to progress during the year, and there has been no falling off in the interest which is taken generally by the public of Gibraltar in this work.

During the year, 108 women were admitted to the Maternity Ward at the Colonial Hospital, and 32 women in poor circumstances had their confinements paid out of Colonial Government funds.

The Children's Ward at the Colonial Hospital had 153 children admitted in 1928.

STATISTICS.

The number of children born during the year was 366, of which number 212 were males and 154 were females.

The birth rate was 23·28.

The number of children born in Gibraltar from parents residing at La Linea was 39—25 being males and 14 females.

The following is the birth rate of Gibraltar compared with that of England and Wales, and Malta.

Year.........	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
England and Wales	18·5	25·4	22·4	20·6	19·7	18·8	18·3	17·8	16·6	16 7
Malta	—	—	—	36·4	34·5	34·6	33·3	32 9	32·6	—
Gibraltar...	24·9	23 2	25·6	22·6	22·5	22·2	23	25·2	22·5	23·2

INFANTILE MORTALITY.

There were forty-five deaths of infants under 1 year, giving an infant mortality rate (number of deaths of infants under 1 year of age per 1,000 births) of 122·9.

The infant mortality rate of 122·9 shows an increase on that of the previous year. The deaths are all from the usual forms of infantile disease, and no one cause is markedly affected.

There does not appear to be any special reason for the rise in infant mortality.

The principal causes of death were :—

Ante-Natal.

Atrophy, Debility and Marasmus	7
Premature Birth	6

Post-Natal.

Diarrhœa and Enteritis	9
Bronchitis and Pneumonia	6
Infectious Diseases	9

The following table shows the infantile mortality for the United Kingdom, Malta, and Gibraltar.:—

INFANTILE MORTALITY PER 1,000 BIRTHS, 1911-1928.

Year	England & Wales	Malta	Gibraltar
1911	130	—	119
1912	95	—	78
1913	108	—	75
1914	105	—	93
1915	110	—	90
1916	91	—	123
1917	96	—	113
1918	97	—	124
1919	89	—	108
1920	80	—	128
1921	83	—	102
1922	77	261	103
1923	69	280	109
1924	75	268	91
1925	75	271	83
1926	70	260	107
1927	69	301	99
1928	69	—	122

WELFARE CENTRE.

There have been 2,453 attendances at the Welfare Centre during the year. This constitutes a record.

The average number of children weighed at each meeting was 60.

The following is the amount of milk, Virol, and other food preparations, etc., distributed during the year either free of or at half cost, to nursing mothers and infants under two years of age.

Milk	4,906	tins
Glaxo	144	,,
Virol	187	pots
Lactogen	96	tins
Dried Milk	61	,,
Feeders	77	
Milo Food	7	tins
Nestle's Food	7	,,

The supply of milk, etc., in necessitous cases to either mother or child is invariably made the subject of careful enquiry.

During the year the trained nurse paid 257 visits to the homes of children.

The distribution of infant clothing by the Gibraltar Needlework Guild has again been of great assistance to mothers in poor circumstances.

MIDWIVES.

Seven midwives are registered under the Midwives' Ordinance, 1907.

None of these are trained nurses.

Registered midwives attended 231 births during the year or 63·1 per cent of the total births, compared with 63·3 per cent in 1927.

The number of births attended by unregistered women was 3.

The number of still-births in 1928 was 18, compared with 9 in 1927; 30 in 1926; 26 in 1925; 26 in 1924; 19 in 1923; 21 in 1922; 23 in 1921, and 16 in 1920.

Thirty-two expectant mothers in poor circumstances had their confinements paid out of Colonial funds.

Periodical inspection of midwives was carried out during the year in accordance with the Midwives' Ordinance, 1907. On the whole the bags, etc., were found satisfactory.

No midwife gave cause for suspension during the year.

*SCHOOL CLINIC.

The School Clinic has been carried on by members of the medical and nursing staff of the Colonial Hospital.

Mr. Garesse was re-appointed as school dentist.

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*Annual Medical Report, Colonial Hospital.

CAUSES OF, AND AGES AT, DEATH OF INFANTS UNDER ONE YEAR OF AGE IN GIBRALTAR DURING 1928.

Cause of Death.	Under 1 week.	1 week and under 2.	2 weeks and under 3.	3 weeks and under 4.	Total under 4 weeks.	1 month and under 3.	3 months and under 6.	6 months and under 9.	9 months and under 12.	Total under 1 year.
Common Infectious Diseases	—	—	—	—	—	2	—	5	2	9
Measles 3 Influenza 1 Whooping Cough 5										
Pneumonia & Bronchitis...	—	—	1	—	1	—	1	3	1	6
Diarrhœa and Enteritis ...	—	—	—	1	1	2	1	4	1	9
Congenital Malformation	—	—	—	—	—	—	—	1	—	1
Premature Birth	5	—	—	—	5	1	—	—	—	6
Atrophy, Debility and Marasmus	—	—	1	—	1	1	4	1	—	7
Convulsions	2	—	—	—	2	—	—	—	1	3
Meningitis	—	—	—	—	—	—	—	1	—	1
Atelectasis	3	—	—	—	3	—	—	—	—	3
Totals	10	—	2	1	13	6	6	15	5	45
Death rate in each age period per 1,000 births	25·9	—	5·1	2·5	33·6	15·5	15·5	38·8	12·9	116·5
Percentage of total infant deaths occurring in each age period	22·2	—	4·4	2·2	28·8	13·3	13·3	33·3	11·1	—

Detailed Statement showing the Number and Causes of Death under 1 year, 1913-1928.

Cause of Death	1913	1914	1915	1916	1917	1918	1919	1920	1921	1932	1923	1924	1925	1926	1927	1928	Total
Meningitis	4	3	4	2	3	3	2	3	1	2	1	4	2	2	—	1	37
Convulsions	3	1	1	4	2	4	—	—	1	—	1	1	2	1	—	3	24
Bronchitis	—	1	1	1	—	1	2	2	1	1	1	—	2	—	3	—	16
Pneumonia	—	2	2	1	7	8	5	1	5	6	3	8	6	8	4	6	72
Enteritis	9	13	6	12	7	3	16	13	11	15	10	5	5	16	8	9	158
Syphilis	—	1	—	—	—	1	—	1	2	—	—	1	1	—	2	—	9
Atelectasis	—	1	1	1	2	2	—	1	—	—	—	—	—	—	—	3	11
Premature Birth	2	3	10	3	6	1	9	10	5	3	7	—	1	10	4	6	80
Atrophy, Debility and Marasmus	5	6	4	14	13	19	5	14	11	7	5	12	8	4	7	7	141
Diphtheria	—	—	1	—	—		—	—	—	—	—	—	—	—	—	—	1
Measles	—	—	—	1	—	—	—	—	3	1	—	—	—	—	—	3	8
Nephritis	—	—	—	1	—	—	—	—	2	—	—	—	—	—	—	—	3
Whooping Cough	2	—	—	—	1	—	—	—	—	2	6	—	—	—	—	5	16
Diseases of Heart	2	—	—	1	—	1	—	—	—	—	—	—	2	—	2	—	8
Intestinal Obstruction	1	1	1	—	—	1	—	—	—	—	—	—	—	1	—	—	5
Septicæmia	—	1	—	—	—	—	1	—	—	—	1	—	—	—	—	—	3
Suppresion of Urine	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Hæmorrhage	—	—	1	—	—	1	—	—	—	—	1	1	—	—	—	—	4
Diarrhœa	—	—	1	—	1	—	2	—	—	—	—	—	—	—	2	—	6
Dentition	—	—	—	1	—	1	—	1	—	—	—	—	—	—	—	—	3
Rickets	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—	2
Starvation	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1
Influenza	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	1	3
Suffocation	—	—	—	—	—	—	—	1	—	1	—	1	1	1	1	—	6
Other Causes	1	2	—	—	—	—	—	—	2	—	4	—	1	3	3	1	17
Totals	29	36	33	42	42	49	43	48	44	38	40	33	31	46	36	45	635

PREVALENCE AND CONTROL OF INFECTIOUS DISEASES.

Gibraltar is associated with all parts of the world by reason of shipping continually arriving at the Port, and also its close association with Spain and Morocco by coastal shipping, so is peculiarly liable to the importation of various forms of infectious disease.

The measures adopted have been successful in preventing any serious outbreaks of infectious disease for many years.

The principal points to be noted regarding infectious diseases during the year are:—

(i) Measles was prevalent in epidemic form, the height of the epidemic occurring in July.

(ii) There was no case of Small Pox or Undulant Fever during the year.

The following infectious diseases are notifiable in Gibraltar in accordance with "The Public Health Ordinance, 1907":—

Venereal Diseases
Plague
Pneumonia
Small Pox
Cholera
Diphtheria
Measles
Membranous Croup
Pulmonary Tuberculosis
Cerebro-Spinal Fever
Enteric Fever
Puerperal Fever
Undulant Fever
Encephalitis Lethargica
Influenzal Pneumonia
Chicken Pox
Yellow Fever
Erysipelas
Poliomyelitis
Acute Dysentery
Scarlet Fever
Acute Epidemic Gastro-Enteritis
Typhus Fever
Relapsing Fever
Ophthalmia Neonatorum

Laboratory work connected with notifiable diseases is done free of charge at the City Council Public Health Laboratories for residents of Gibraltar and Gibraltarians resident in the neighbourhood.

GENERAL INCIDENCE.

The number of cases of infectious disease notified during the year, exclusive of Naval and Military cases and cases landed from shipping in the Bay or brought into the Town for treatment, was 1,252, of which 961 were Measles, 134 Pneumonia and 29 Chicken Pox.

Thirty deaths were attributable to one or other of the eight principal acute infectious diseases; eleven being due to Measles, eleven to Diarrhœa and Enteritis, six to Whooping Cough, one to Enteric Fever, and one to Diphtheria. The zymotic death rate was 1·7 per 1,000.

QUARTERLY INCIDENCE OF NOTIFIABLE INFECTIOUS DISEASES. CIVIL POPULATION.

Disease	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total	Deaths
Diphtheria	11	3	3	3	20	1
Pneumonia	51	41	33	9	134	30
Pulmonary Tuberculosis ...	9	9	6	6	30	26
Venereal Diseases	1	—	4	2	7	—
Measles	1	407	551	2	961	11
Influenzal Pneumonia	2	2	5	1	10	1
Chicken Pox	1	16	8	4	29	—
Erysipelas	4	9	5	12	30	2
Enteric Fever	1	—	2	3	6	1
Scarlet Fever	—	2	—	1	3	—
Gastro Enteritis	—	4	6	4	14	11
Dysentery....................	—	—	2	3	5	—
Cerebro-Spinal Meningitis	—	—	1	—	1	—
Rubella.......................	—	—	1	—	1	—
Puerperal Fever	—	—	1	—	1	—
Totals	81	493	628	50	1,252	83

WEEKLY NOTIFICATION OF CASES OF INFECTIOUS DISEASES DURING 1928.

DISEASE.	JANUARY					FEBRUARY				MARCH				APRIL					MAY				JUNE				JULY					AUGUST				SEPTEMBER				OCTOBER					NOVEMBER				DECEMBER					TOTALS.	
	2	9	16	23	30	6	13	20	27	5	12	19	26	2	9	16	23	30	7	14	21	28	4	11	18	25	2	9	16	23	30	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19	26	3	10	17	24	31	Local	Bay, &c.
Diphtheria	1	1	1	..	2	2	..	1	..	1	1	1	..	..	..	1	1	1	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	1	1	..	..	..	20	..
Pneumonia	..	4	1	4	1	8	3	1	15	5 **1**	7 **1**	..	..	2 **1**	2	4	2	3 **1**	1	4	2	1	8	2	3	5	4	2	2	..	7	4	7	1	1	2	..	3	..	4	..	..	..	..	1	..	..	1	2 **2**	2	1	2	..	134	6
Tubercle of Lung	..	1	..	1	1	..	2	2	1	..	..	..	1	..	..	..	..	1	1	..	2	..	2	1	..	2	..	..	1	.. **1**	..	2	..	..	..	..	1	1	..	3	..	..	..	2	..	..	..	..	..	2	..	..	.. **1**	30	2
Venereal Diseases	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	7	..
Measles	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	.. **1**	..	..	33	31	48	62	51	95	101	163	104	120	67	30	27	12	5	5	..	1	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	961	1
Influenzal Pneumonia...	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	1	..	2	..	1	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	10	..
Chicken Pox	..	..	..	..	1 **1**	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	2	3	2	1	2	3	1	..	3	3	2	..	..	..	..	..	..	..	..	..	..	..	1	..	1	1	..	1	..	..	..	..	..	29	1
Erysipelas	..	..	..	..	..	2	..	1	1	..	..	..	..	..	..	..	..	2	..	..	1	1	..	3	..	1	1	1	..	..	3	1	..	..	..	..	..	..	..	..	..	2	1	..	1	2	3	..	1	..	..	1	1	30	..
Enteric Fever	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	.. **1**	..	..	..	..	..	..	..	..	1 **1**	..	..	..	1	..	..	..	..	..	..	1	1	1	..	..	..	.. **1**	..	..	..	..	6	3
Dysentery	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.. **1**	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	1 **1**	..	..	2	..	..	..	..	..	..	..	..	..	5	2
Scarlet Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	3	..
Gastro-Enteritis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	1	..	..	2	..	..	1	..	..	1	..	1	..	1	..	..	..	..	..	2	..	..	..	1	..	..	1	14	..
Rubella...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Puerperal Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Cerebro-Spinal Meningitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Totals	1	7	2	7	5 **1**	12	5	5	18	6 **1**	8 **1**	1	2	2 **1**	2	5	3	8 **2**	2	5	40 **1**	37	61 **1**	71	59	109	109	166	115	129 **1**	82	39 **1**	35	13	6	11	1	6	..	9	3 **1**	2	3	6	4	5	5	2	6 **3**	6	1	3	2 **1**	1,252	15

Block Figures—Cases landed from the Bay or brought into the Town for treatment,

Age and Sex incidence of notifiable Infectious Diseases amongst Civil Population during 1928.

Notifiable Disease.	NUMBER OF CASES NOTIFIED.															Districts.			Total cases removed to Hospital	
	At all Ages	Under 1.		1 and under 5.		5 and under 15.		15 and under 25.		25 and under 45.		45 and under 65.		65 and Over.		North.	Central.	South.	Residents.	Non-Residents.
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.					
Diphtheria	20	—	—	3	5	2	5	—	1	—	4	—	—	—	—	—	20	—	4	—
Pneumonia	134	14	7	23	30	14	16	6	2	3	10	7	4	5	3	5	124	5	25	6
Pulmonary Tuberculosis ...	30	—	—	—	—	1	—	6	6	2	4	7	3	1	—	1	26	3	1	1
Venereal Diseases...	7	—	—	—	—	—	—	4	—	3	—	—	—	—	—	—	7	—	—	—
Measles	961	26	21	222	233	224	223	5	5	2	—	—	—	—	—	22	910	29	7	1
Influenzal Pneumonia	10	—	—	—	—	—	1	—	1	1	2	3	1	1	—	—	8	2	—	—
Chicken Pox...	29	2	3	6	7	5	4	1	—	1	—	—	—	—	—	—	29	—	3	1
Erysipelas	30	—	—	—	1	2	—	1	—	5	3	4	9	—	5	—	29	1	3	—
Enteric Fever	6	—	—	—	—	1	—	2	—	1	2	—	—	—	—	1	5	—	1	3
Scarlet Fever	3	—	—	—	1	1	1	—	—	—	—	—	—	—	—	—	2	1	—	—
Gastro-Enteritis	14	3	1	6	1	2	1	—	—	—	—	—	—	—	—	—	14	—	—	—
Dysentery	5	1	—	—	1	2	1	—	—	—	—	—	—	—	—	—	4	1	—	2
Cerebro-Spinal Meningitis ...	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1	—	1	—
Rubella	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Puerperal Fever	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	—	—	—
Totals	1252	46	32	261	279	254	243	25	15	18	26	21	17	7	8	29	1181	42	45	14

Monthly notification of notifiable Infectious Diseases.

Months.	Cases occurring amongst the Civil Population.																															
	Diphtheria		Pneumonia		Pulmonary Tuberculosis		Venereal Diseases		Measles		Influenzal Pneumonia		Chicken Pox		Erysipelas		Enteric Fever		Scarlet Fever		Gastro-Enteritis		Dysentery		Cerebro-Spinal Meningitis		Rubella		Puerperal Fever	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
January ……… ……………	7	—	11	2	3	3	1	—	1	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
February ………………………	2	—	29	4	5	3	—	—	—	—	1	—	—	—	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
March ……………………………	2	—	11	2	1	3	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—
April ………………………………	3	—	11	1	1	1	—	—	—	—	—	—	1	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
May ……………………………	—	—	15	5	4	1	—	—	99	1	1	—	7	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
June ………………………………	—	—	15	2	4	2	—	—	308	4	1	—	8	—	5	—	—	—	2	—	4	1	—	—	—	—	—	—	—	—
July ………… …………	2	1	14	3	2	1	2	—	484	5	4	—	8	—	4	—	1	1	—	—	2	—	2	—	1	—	1	—	1	—
August ………………………………	—	—	12	7	1	3	—	—	66	1	1	—	—	—	1	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—
September …………………………	1	—	7	2	3	1	2	—	1	—	—	—	—	—	—	—	1	—	—	—	3	3	—	—	—	—	—	—	—	—
October ………………… ……	1	—	1	—	4	4	—	—	1	—	1	1	2	—	4	—	3	—	—	—	—	1	3	—	—	—	—	—	—	
November ……………………………	1	—	3	1	—	1	2	—	1	—	—	—	2	—	6	1	—	—	—	—	2	2	—	—	—	—	—	—	—	—
December ………………………………	1	—	5	1	2	3	—	—	—	—	—	—	—	—	2	1	—	—	1	—	2	2	—	—	—	—	—	—	—	—
Totals ………… …………	20	1	134	30	30	26	7		961	11	10	1	29		30	2	6	1	3		14	11	5		1		1		1	

Monthly notification of notifiable Infectious Diseases.

Months.	Cases landed from the Bay or brought into the Town for treatment.											
	Chicken Pox		Pneumonia		Dysentery		Enteric Fever		Pulmonary Tuberculosis		Measles	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
January	1	—	—	2	—	—	—	—	—	—	—	—
February	—	—	1	—	—	—	—	—	—	—	—	—
March	—	—	2	—	—	—	—	—	—	—	—	—
April	—	—	1	1	—	1	—	—	—	—	1	—
May...	—	—	—	—	1	—	1	—	—	—	—	—
June...	—	—	—	—	—	—	—	—	—	—	—	—
July ...	—	—	—	—	—	—	1	—	1	—	—	—
August	—	—	—	1	—	—	—	—	—	—	—	—
September	—	—	—	—	—	—	—	—	—	—	—	—
October	—	—	—	—	1	—	—	—	—	—	—	—
November	—	—	2	—	—	—	1	—	—	—	—	—
December	—	—	—	—	—	—	—	—	1	1	—	—
Totals ...	1	—	6	4	2	1	3	—	2	1	1	—

QUARTERLY INCIDENCE OF NOTIFIABLE INFECTIOUS DISEASES LANDED FROM THE BAY OR BROUGHT INTO THE TOWN FOR TREATMENT.

Disease	1st Qr.	2nd Qr.	3rd Qr.	4th Qr.	Total	Deaths
Chicken Pox	1	—	—	—	1	—
Pneumonia	3	1	—	2	6	4
Measles	—	1	—	—	1	—
Dysentery	—	1	—	1	2	1
Enteric Fever	—	1	1	1	3	—
Pulmonary Tuberculosis	—	—	1	1	2	1
Totals	4	4	2	5	15	6

ENTERIC FEVER.

Six cases of this disease occurred during the year. One case proved fatal.

Three cases were also landed from shipping in the Bay.

The cases were sporadic and occurred in different localities.

The source of the illness was not ascertained in any of the cases.

SEASONAL PREVALENCY OF ENTERIC FEVER IN GIBRALTAR DURING 1928.

Month	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov	Dec.	Total
Local cases	—	—	1	—	—	—	1	—	1	3	—	—	6
Imported cases	—	—	—	—	1	—	1	—	—	—	1	—	3

AGE AND SEX DISTRIBUTION.

Age	Under 3		3 to 5		5 to 10		10 to 15		15 to 20		20 to 25		25 to 45		45 to 65		65 & over		Total.	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Cases	—	—	—	—	—	—	1	—	1	—	1	—	1	2	—	—	—	-	4	2
Deaths	—	—	—	—	-	—	—	—	—	—	—	—	—	1	—	—	-	—	—	1

DIPHTHERIA.

The comparatively high incidence of Diphtheria noted in 1927 has now fallen considerably. During 1928, twenty cases were notified giving an attack rate of 1·2 per thousand of population.

Of these one case proved fatal.

Four cases were treated in hospital.

The disease was most prevalent during the early part of the year, January-April.

The majority of cases occurred in children of school age; seven cases occurred in the age period 5-15.

Diphtheria Antitoxin.

Over 400,000 units were supplied to medical practitioners by the Public Health Department during the year. In cases of poor persons no charge is made.

SEASONAL PREVALENCY OF DIPHTHERIA IN GIBRALTAR DURING 1928.

Month	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
Local Cases	7	2	2	3	—	—	2	—	1	1	1	1	20
Imported Cases...	—	—	—	—	—	—	—	—	—	—	—	—	—

AGE AND SEX DISTRIBUTION.

Age	Under 3		3 to 5		5 to 10		10 to 15		15 to 20		20 to 25		25 to 45		45 to 65		65 & over		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Cases	2	1	1	4	2	4	—	1	—	-	—	1	—	4	—	—	—	—	5	15
Deaths	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1

MEASLES.

Measles is more or less constantly present in all large cities in the temperate zone. It is less common in the tropics, although it spreads as readily in hot as in cold climates.

The maximum incidence of Measles occurs at from six to seven years of age.

Periodicity.—Epidemics recur cyclically at intervals of two or three years, with considerable regularity in thickly settled communities.

The Periodicity of Measles in Gibraltar during the last 41 years.—A chart is inserted to show the distribution of Measles in Gibraltar during the period 1888-1928.

The chart shows that Measles is an endemic disease with epidemics occurring approximately every three years.

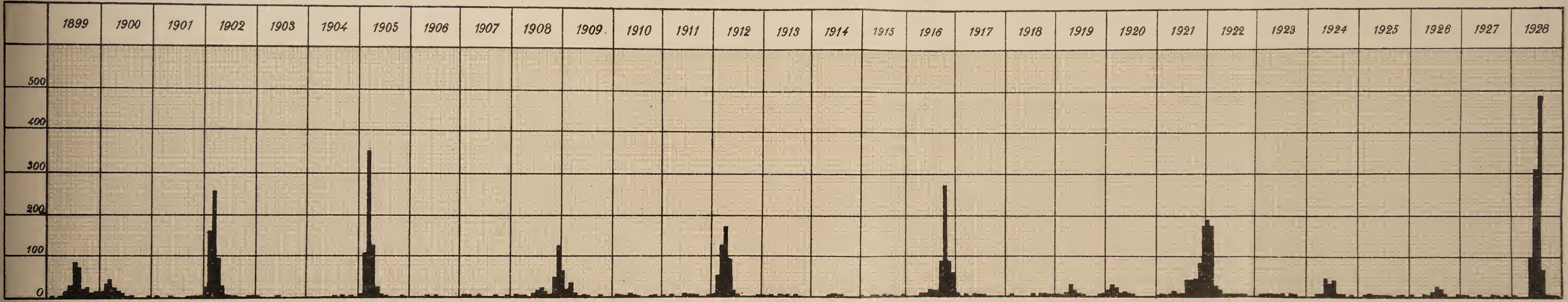
Statistics of the 1928 Epidemic.—

Cases notified—North District	22
Central District	910
South District	29
Total	961
Case rate per 1,000 of population	61·1
Deaths	11
Death rate per 1,000 of population	0·69
Proportion of deaths to cases or fatality rate	1·1 per cent.

During the year 961 cases were reported to the Department, which number is the largest ever reported in one year. This may be due to the fact that there have been comparatively few cases of Measles in Gibraltar in recent years. In 1920, 1921 and 1922, 808 cases of Measles were notified, but since then only 279 cases have occurred in five years, so there were a large number of susceptible children in the Colony who had not had the disease.

The mortality in Measles depends mainly upon the age at which infection occurs; the majority of deaths occur in children under four years of age. Any increase in the proportion of cases amongst children under this age will be attended by a corresponding rise in fatality.

MONTHLY INCIDENCE OF MEASLES IN GIBRALTAR—1899-1928



Seasonal Distribution.—The epidemic started in May and ended in August, the largest number of cases occurring in July.

SEASONAL PREVALENCY OF MEASLES IN GIBRALTAR DURING 1928.

Month	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec	Total
Local Cases	1	—	—	—	99	308	484	66	1	1	1	—	961
Imported Cases ..	—	—	—	1	—	—	—	—	—	—	—	—	1

The following table shows the age and sex distribution:—

AGE AND SEX DISTRIBUTION.

Age	Under 3		3 to 5		5 to 10		10 to 15		15 to 20		20 to 25		25 to 45		45 to 65		65 & over		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Cases	120	131	128	123	197	199	27	24	3	5	2	—	2	—	—	—	—	—	479	482
Deaths	7	4	—	—	—	—	-	—	—	—	—	—	—	—	—	—	—	—	7	4

It will be seen that the sexes are attacked more or less equally. Regarding age, the maximum number of cases occurred between the ages of 5-10.

As five years had elapsed since the last considerable outbreak, these figures show the influence of schools in spreading infection.

Notification is compulsory, but owing to the mild nature of the epidemic doctors were often not called in, consequently, many cases were never reported, and there can be little doubt that a certain proportion of the cases occurring were not brought to the notice of the Public Health Department. This deficiency exists mainly amongst age groups under 5, as absentees from school during the epidemic were at once visited and many cases were brought to notice in this way.

Character of the Epidemic.—The epidemic was of a mild nature and complications were rare.

Seven cases were admitted to hospital.

There were eleven deaths, the details of which are as follows:—

Age.	Secondary Cause.
8 months	Broncho Pneumonia
1 year 7 months	Meningitis
1 year 8 months	Convulsions
1 year 5 months	Laryngitis
1 year 7 months	Toxaemia
7 months	Acute Meningitis
1 year 1 month	Meningitis
1 year 6 months	Broncho Pneumonia
2 years 4 months	Broncho Pneumonia
7 months	Cardiac Failure
1 year 6 months	Cardiac Failure

Preventive Measures.—One Sanitary Inspector devoted his full time to the epidemic, visiting every notified case and making full enquiries regarding the household and completing an infectious disease card. In this way many cases were brought to notice which would otherwise have not been reported.

Each parent was given a small up-to-date pamphlet entitled "Measles—Important Advice to Parents" which was explained to them in detail by the Sanitary Inspector.

Owing to the crowded nature of most of the houses anything in the nature of strict isolation was impossible, although efforts were made to secure isolation of patients whenever possible, and parents were urged to keep young children apart from those already affected.

Under the Destitute Sick and Tuberculosis Scheme and the Child Welfare Scheme assistance was afforded to cases amongst the poorer inhabitants on the recommendation of the District Medical Officers.

Schools.—The Sanitary Inspector worked in close co-operation with the School Attendance Officer, and all absentees from school were visited and the reason of their absence enquired into; in this way also a large number of cases were found. Schools were also regularly visited by the Sanitary Inspector.

Closure and Exclusion from School.—The memorandum on this subject issued jointly by the Ministry of Health and the Board of Education, 1927, has been closely followed.

Exclusion of cases and contacts from school is rigidly enforced until 21 days from the date of onset of the illness of the last patient with Measles in the home, and parents and schools are warned of the restrictions placed on school attendance by the usual notices.

School Closure.—This was not resorted to as there is now a general consensus of opinion that except in the case of scattered rural populations it is useless as a means of checking the spread of the disease. It appears certain that in populous districts school closure for Measles has but very little value as a public health measure.

Schools were closed for the summer holidays during the latter part of the epidemic.

Disinfection.—Disinfection was carried out in all cases.

PNEUMONIA.

There were 134 cases of this disease notified during the year with 30 deaths.

Ninety-four of the cases occurred in persons under 15 years of age.

SEASONAL PREVALENCY OF PNEUMONIA IN GIBRALTAR DURING 1928.

Month	Jan.	Feb	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Local cases ...	11	29	11	11	15	15	14	12	7	1	3	5	134
Imported cases	—	1	2	1	—	—	—	—	—	—	2	—	6

AGE AND SEX DISTRIBUTION.

Age	Under 3		3 to 5		5 to 10		10 to 15		15 to 20		20 to 25		25 to 40		45 to 65		65 & over		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Cases	24	28	12	11	8	5	5	1	4	1	2	1	3	10	7	4	5	3	70	64
Deaths	8	4	—	1	—	1	1	—	—	—	1	—	2	1	3	2	2	4	17	13

SCARLET FEVER.

There were only 3 cases of Scarlet Fever during the year none of which proved fatal.

SEASONAL PREVALENCY OF SCARLET FEVER IN GIBRALTAR—1928.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Local Cases	—	—	—	—	—	2	—	—	—	—	—	1	3
Imported Cases	—	—	—	—	—	—	—	—	—	—	-	—	—

AGE AND SEX DISTRIBUTION.

Age	Under 3		3 to 5		5 to 10		10 to 15		15 to 20		20 to 25		25 to 45		45 to 65		65 & Over		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Cases	—	—	—	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	1	2
Deaths	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

UNDULANT FEVER.

No cases occurred during the year.

SMALL POX.

There was no local case of Small Pox during the year.

This is the fourth year in succession that no case of this disease has occurred in Gibraltar, and is evidence of the results of efficient vaccination.

No case was landed from the Bay during the year.

VACCINATION.

During the year 527 vaccinations were performed, 220 of which were in accordance with the provisions of " The Vaccination Ordinance, 1887," on children who had attained the age of 12 years.

Where vaccination is compulsory and practically everybody is vaccinated, experience indicates that two vaccinations are enough for all practical purposes to control Small Pox. This experience has been confirmed in Gibraltar where the Vaccination Ordinance makes vaccination compulsory within three months of birth and re-vaccination when children have attained the age of 12 years.

The Public Vaccinator has performed 263 vaccinations and 226 re-vaccinations during the year.

The following statistics show the state of vaccination for births during the year 1928:—

Number of Infants registered in Gibraltar.	Died before vaccination.	Left Gibraltar.	Number requiring to be vaccinated.	Certified as successfully vaccinated.	Certified as insusceptible to vaccination.	Vaccination postponed.	Number remaining.	Vaccination certificates received for children not registered in Gibraltar.
366	22	27	317	245	—	19	34*	8

*Had not attained the age of three months.

VENEREAL DISEASE.

Prevention and Treatment.—In considering this question, the peculiar position of Gibraltar must be appreciated.

(i) Garrison.—Special arrangements are made both for prevention and treatment.

(ii) As a Port of Call.—Though Gibraltar is an important port of call most ships only remain here a few hours, and are only a few days from home ports. There appears to be, therefore, little necessity for treatment facilities here and little opportunity of utilizing the facilities provided.

Spanish or Moorish coastal vessels are only a short time away from their home ports, and here again little demand for treatment arises.

Notices and pamphlets are distributed by the Port Authorities to vessels which are staying in the harbour overnight.

Treatment is free to all, and every facility is provided at the Colonial Hospital for both in and out-patients in the treatment of Venereal Disease, male and female.

Venereal work is done in the City Council's Public Health Laboratories free of charge for residents of Gibraltar and Gibraltarians resident in the neighbourhood and for the Port.

*The number treated in the Male Venereal Ward, Colonial Hospital, was 65 of whom 17 were mercantile seamen, compared with 78 and 20 respectively in 1927. The number of intravenous injections was 243.

*SEGREGATION BLOCK—Colonial Hospital.

In the Segregation Wards 61 cases were treated compared with 78 in 1927 and 50 in 1926. The prevalent disease was measles, which occurred in the town in epidemic form during the year.

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*Annual Medical Report, Colonial Hospital.

PULMONARY TUBERCULOSIS.

Number of Notifications and Deaths.—During the year there were 30 notifications of Pulmonary Tuberculosis, a decrease of two on the number notified during the previous year.

The average number of cases of Pulmonary Tuberculosis in the Gibraltar Home for Sick and Aged (where special arrangements are provided for persons suffering from this disease) was 10.

As a rule only cases in the last stages of the disease avail themselves of the facilities afforded.

The case rate per 1,000 of population works out at 1·9.

The number of deaths recorded from this disease was 26 (as against 22 in the previous year) giving a death rate of 1·6 per 1,000 of population.

SEASONAL PREVALENCY OF PULMONARY TUBERCULOSIS IN GIBRALTAR DURING 1928.

Month	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug	Sept.	Oct	Nov.	Dec.	Total
Local Cases	3	5	1	1	4	4	2	1	3	4	—	2	30
Imported Cases ...	—	—	—	—	—	—	1	—	—	—	—	1	2

AGE AND SEX DISTRIBUTION.

Age	Under 3		3 to 5		5 to 10		10 to 15		15 to 20		20 to 25		25 to 45		45 to 65		65 & over		Total	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Cases	—	—	—	—	—	—	1	—	3	2	3	4	2	4	7	3	1	—	17	13
Deaths	—	—	1	—	—	—	—	1	2	1	4	—	1	2	10	2	2	—	20	6

Bacteriological Work.—The number of specimens of sputum examined for Tubercle bacilli during the year has been 179 of which 21 were positive and 158 negative.

REPORT OF THE DESTITUTE SICK AND TUBERCULOSIS SCHEME FOR 1928.

The Destitute Sick and Tuberculosis Scheme is administered by the Council. There is a Standing Poor Relief Committee which met 13 times during the year.

Close co-operation is maintained with the various other charitable organisations and each case is carefully investigated.

The total expenditure for the year was £3,729–9–10.

OUTDOOR RELIEF.

The number of persons in receipt of outdoor relief during the year was as follows:—

Month.	*No. of Persons.*
January	67
February	69
March	69
April	68
May	69
June	72
July	75
August	75
September	73
October	73
November	72
December	73

The total amount of relief given during the year was:—

Meat	6,530 lbs.
Milk (Condensed)	4,560 tins
Milk (Fresh)	1,845 pints

in addition to small minor grants to families.

The total cost of outdoor relief during the year has been £781–11–11.

THE GIBRALTAR HOME FOR SICK AND AGED.

The average number of inmates in the "Home" during the year was 66.

The comfort of the inmates has been much increased by the various improvements effected at the Home and the administration greatly facilitated.

FEEDING.

The cost of feeding is still very moderate, averaging 11¼*d.* per head per day for the year.

The inmates are well fed and are very satisfied with their rations. Every effort is made to vary the dietary and to feed them economically.

DESTITUTE SICK AND TUBERCULOSIS SCHEME.

SUMMARY OF INDOOR AND OUTDOOR EXPENDITURE FOR THE YEAR 1928.

INDOOR RELIEF.

	£	s.	d.	£	s.	d.
Provisions	1,144	4	9			
*Miscellaneous	436	8	7			
Maintenance of Buildings	595	1	2			
Rent	345	10	0			
Light	28	1	7			
Water	72	17	4			
Telephone	10	0	0			
Printing	4	7	6			
Insurance	1	10	0			
Funeral Expenses	2	13	0			
Clothing, &c.	18	4	0			
				2,658	17	11

Days of Subsistence	24,308
Average number of Inmates	66
Cost of feeding per head per day	11¼*d.*
Cost of feeding per head per year	£17 6 9
Total all-in cost per head per day	2*s.* 2¼*d.*
Total all-in cost per head per year	£40 5 8½
Calories per head per day	2,759

OUTDOOR RELIEF.

	£	s.	d.	£	s.	d.
Meat 6,530 lbs.	176	16	9			
Milk, Fresh, 1,845 pints	26	17	11			
Milk, Condensed, 4,560 tins	158	17	11			
Grants to Families	398	6	4			
Funeral Expenses	11	13	0			
Printing	4	0	0			
Grant to Soup Kitchen	5	0	0			
				781	11	11
Salaries				289	0	0
Total expenditure on Indoor and Outdoor for 1928				3,729	9	10

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*Includes Washing and Cleansing, Coal and Charcoal, Boot repairs, Utensils, Ice, Medicines, Tobacco, &c.

MEDICAL WORK OF THE COUNCIL.

During the year, 125 men were medically examined on engagement, as follows:—

January	17
February	—
March	4
April	4
May	6
June	29
July	10
August	26
September	6
October	10
November	12
December	1
Total	125

Eighty-seven men were absent at some time or other from work owing to disability attributable to their work, the total absence being 1,071 days.

The number of men admitted to Hospital during the year on account of sickness or injury contracted in their work was 19.

SERA, VACCINE, &c., KEPT IN STOCK.

Anti-Meningococcus Serum.
Anti-Streptococcus Serum.
Anti-Anthrax Serum.
Anti-Dysentery Serum.
Anti-Plague Serum.
Plague Prophylactic.
Cholera Vaccine.
Diphtheria Antitoxin.
Tetanus Antitoxin.
Tuberculin.
Insulin.
Calf Lymph.
Influenza Vaccine.
Diphtheria Prophylactic.
Scarlet Fever Streptococcus Antitoxin.

INVESTIGATION AND PREVENTION OF OTHER DISEASES.

MOSQUITOES.

Anti-mosquito measures were carried on throughout the year and the results obtained were very satisfactory.

The public are taking an interest in the work and are now co-operating to a considerable extent.

The control of domestic mosquitoes, as I have previously pointed out, requires a sustained effort and to this is due, to a large extent, the success of our efforts.

THE RESULTS OF THE CAMPAIGN.—These are given in the accompanying table and show that there was an increase in the number of breeding places found during the year, as compared to 1927.

WATER TANKS.—A complete inspection of the roof tanks in the Colony has again been carried out with the following results:—

	Inspected.	Found defective.
Fresh water tanks ...	506	39
Brackish water tanks ...	311	39
Totals	817	78

From these figures it will be seen that the number of roof tanks in Gibraltar has much decreased in recent years.

DENGUE FEVER.—The prevalence of Dengue Fever in the Mediterranean draws attention to the importance of Mosquito Control in Gibraltar, where *Aëdes argenteus* (*Stegomyia fasciata*), the carrier of this disease, is present.

In the Autumn and Summer of 1928 an epidemic of Dengue of unexampled severity swept over nearly the whole of Greece.

It has been shown that *Aëdes* once infected remains infected for so long as she lives. Prevention of this disease obviously lies primarily in the destruction of *Aëdes*.

It has been said that the community that suffers from Dengue has deserved the visitation.

The following circular issued from the Public Health Office, Valletta, in September 1928, is of great value and is reproduced in extenso by kind permission of the author:—

PUBLIC HEALTH OFFICE,

Valletta, 10th September, 1928.

Sir,

The epidemic of Dengue fever which is at the moment raging in Greece, and the possibility of the disease appearing in our midst, prompts me to offer a few succinct remarks anent the different kinds of fever of short duration which might come under the care of medical practitioners in these Islands.

2. The circumstance that the "Enteric" group and the "Undulant" group of fevers may manifest themselves clinically as a disorder lasting only a few days is too familiar to need much comment. The diagnosis of the nature of infection can be reliably made by blood-culture or by examination of the excreta. No reliance whatever should be placed on a negative serum-reaction, and this circumstance does not warrant the medical attendant to set aside a diagnosis which he is justified in deducing from the clinical picture itself.

3. I may here mention that several varieties of idiopathic continued fevers lasting 14, 21, or more days, even accompanied by enlarged spleen, have been described as occurring in Egypt, Greece and other Mediterranean regions, and have been proved to be unconnected etiologically with either the "Enteric" or the "Undulant" groups. They are still unsufficiently classified and their pathology and epidemiology is still under investigation. Similar cases have been met with in Malta and their occurrence should be noted and studied.

4. Of the shorter fevers endemic in these Islands the most familiar is Phlebotemus, Sand-fly, or Three-days fever. The onset of the disease is generally sudden and ushered in by a sharp rigor, a prodromal stage of general malaise only occasionally preceding. The temperature rises in a few hours to 103°, 104° F. or even higher, it reaches its maximum on the second day and on the third falls to normal by crisis or by lysis—rarely it does not disappear completely till the fourth day. Severe frontal headache, pains all over the body, specially intense in the back and in the limbs, are prominent symptoms, as also frequently gastric pain and anorexia. A coated tongue, with clear edges, a flushed face and injection of the conjuntivæ with a certain degree of photophobia complete the picture in ordinary cases. The pulse follows the temperature at first but later bradychardia is a marked feature and persists during convalescence, together with mental and physical depression which may keep the patient unfit for any exertion for one or two weeks. There are no rashes in this fever but the numerous bites of the *Phlebotomi* and the irritation produced may give rise to papules and even vesicles

especially in persons newly come into the Island. A dry cough and a little bronchitis may be present, but the usual absence of salient catarrhal symptoms and the seasonal prevalence are generally sufficient to differentiate this disease from the Influenzas, the most common conditions with which, in these Islands, it may be mistaken.

The characteristic pathological note is the condition of the blood; it shows a marked leucopenia ranging between 4,000 and 5,000 leucocytes per c.c. and a relative monocytosis.

The periods of maximum prevalence in Malta are two: July and September, corresponding with the two broods of the Phlebotomi, the vectors of the infection. The incubation period is from 4 to 7 days.

5. Dengue is a disease with which Phlebotomus fever was for a long time confused. Typical Dengue fever is not endemic in Malta, it has occasionally been introduced into these Islands and the last occasion when it assumed epidemic proportions was in the summer of 1881, when it came to be called "Ghio's fever."

The fever in Dengue lasts generally for 7 days. It commences very suddenly and rises very frequently to 105° or 106° F. It remains high for three days, when a remission, or sometimes an actual intermission, takes place which may last from 12 hours to 2 days; it then rises again sharply to about 103° (saddle-back curve), to end by crisis on the 7th day.

The other symptoms of the disease are very much like those of Phlebotomus fever and need not be repeated, only they are more intense and distressing especially the pains in the muscles, the resulting stiffness being so marked that the by-name of "Dandy fever" has widely been applied to the disease. The joints themselves are not swollen or directly affected, point which serves to distinguish it from Rheumatic disease, the pain being located in the tendinous insertions round the joints. The mental and physical depression is generally very severe, and genuine neurasthenic conditions greatly prolong convalescence. All the symptoms relax during the remission of the temperature but come on again with the relapse.

The distinguishing feature of the disease is the exanthem. Shortly after the onset of the fever the face becomes congested and puffy, and there may also be scarlatiniform erythema of the face and the extremities. But the eruption proper appears with the second rise of temperature, when a morbilliform erethema starting around the wrists and ankles rapidly spreads to the arms, the legs and the trunk. The rash may also be scarlatiniform or intermediate in appearance between the two types, and desquamation generally follows which may last for two or three weeks.

The blood in this disease also shows a leucopenia, a reduction in the polymorphs and an increase in the lymphocytes. *Aëdes aegypti (Stegomyia fasciata)* and possibly other mosquitoes are vectors of Dengue fever. It is therefore a disease of the summer months. The incubation period is about five to eight days, but may be as long as twelve.

In the Greek epidemic, nervous symptoms, such as transient paralysis amaurosis, encephalitis and psychical disturbance, have been conspicuous, Hæmorrhagic tendencies such as menorrhagia, hæmaturia and hæmorrhagic rashes have occurred, while in other cases severe gastro-intestinal symptoms predominated. Several cases have closely resembled typhus, typhoid, cholera, measles, early small-pox, malaria and acute cerebral conditions. Deaths occur in elderly or neglected cases. (League of Nations Report.)

No specific treatment is available and only symptoms can be counter acted. Rest in bed, a low diet and administration of lemon juice has been the routine treatment adopted in Greece. Quinine is said to be contra-indicated.

The rash serves to distinguish Dengue from Phlebotomus fever, influenza and rheumatic affections. Atypical dengue is however indistinguishable from Phlebotomus fever and diagnosis in such instances can only rest on concomitant epidemiological conditions. From measles it is distinguished by the absence of catarrhal symptoms, of muscular pains and by the season of prevalence; from scarlet fever and from rothëln by the absence of tonsillitis or enlargement of glands. The differential diagnosis between Dengue and the Typhus-like exanthem which has recently been reported as occurring on the Mediterranean littoral may not be so easy. Two cases of what appeared to be the latter disease have been observed in Malta: one in an arrival from Tripoli, the other in an arrival from Tunis. The condition of the throat, the absence of muscular pains and the course of the temperature inclined us to discard a diagnosis of Dengue.

6. The description given above is that of a typical case of Dengue, but the remission of temperature may be absent and the periods may be merged into one. Either one or both rashes may be altogether absent. Many observers are inclined to classify cases of six or seven days fever, even when not showing intermission of temperature or rash, as dengue. In Malta the occurrence of six or seven days fever is not rare, and sometimes, although the spleen is largely enlarged, the diagnosis of Enteric or Undulant infection can be ruled out. The circumstance that these short fevers occur in Malta while typical dengue has not been observed here for many years, seems to militate against the contention that all six or

seven day fevers are cases of atypical dengue. The nature of these unclassified shorter fevers like those of longer duration mentioned in the third paragraph of this paper still awaits elucidation. Some of them may be instances of copræmic, or of fermentation, fever but others are very probably specific infections. The medical practitioners of these Islands would furnish a very valuable contribution to the unravelling of the etiology and epidemiology of these various feverish disorders by recording and describing them, as is being done in other countries. I have mentioned the general practitioners, as these cases rarely find their way into an institution, but even if they continue to be cared for at their homes the pathology of the condition can be studied. The Government Pathologist, a willing worker of high scientific attainments, has been allotted the duty of assisting practitioners in research work and there exists, therefore, ample opportunity of studying the condition of the blood and the bacteriology of the cases.

I need hardly add that the Staff of the Public Health Department will be ever ready to give its help whenever this may be asked for.

I have the honour to be,
Sir,
Your obedient Servant,
(Sd.) A. V. BERNARD,
Acting Chief Govt. Medical Officer
and Superintendent of Public Health.

MOSQUITO CAMPAIGN.

MEN EMPLOYED DURING THE YEAR 1928.

4 men	from	1/ 1/28	to	2/ 5/28
6	,,	2/ 5/28	,,	7/ 5/28
10	,,	7/ 5/28	,,	12/ 5/28
9	,,	12/ 5/28	,,	15/ 5/28
10	,,	15/ 5/28	,,	12/ 6/28
11	,,	12/ 6/28	,,	18/ 7/28
12	,,	18/ 7/28	,,	28/ 7/28
11	,,	28/ 7/28	,,	31/ 7/28
10	,,	31/ 7/28	,,	1/ 8/28
11	,,	1/ 8/28	,,	2/ 8/28
10	,,	2/ 8/28	,,	3/ 8/28
11	,,	3/ 8/28	,,	7/ 8/28
12	,,	7/ 8/28	,,	16/ 8/28
14	,,	16/ 8/28	,,	31/10/28
4	,,	31/10/28	,,	31/12/28

The Extensive Campaign started on the 2/5/28, and ended on the 31/10/28.

With reference to the statement in the Annual Report for the year 1927 that Yellow Fever is observed to be travelling up the West Coast of Africa and that many cases have occurred recently in French Senegal, the following is of particular interest:—

Extract from *Lloyds Lists* of the 26th April, 1929 :—

> "There has been no further case of yellow fever at Dakar since December 25, 1927. A considerable advance has been made in methods of hygiene and in the prevention of the spreading of contagious diseases, thanks to the collaboration of all the administrative and technical departments with the aid of the merchants and population. Important undertakings have been satisfactorily concluded, such as the separation of localities inhabited by Europeans or foreigners of the white races, and the systematic disinfection of all dwellings in Dakar, without exception, with a

view to the destruction of rats, of mosquitoes and other parasites. The war against larvæ has been pursued relentlessly, and it has become quite an exception to find any larvæ. The system of supply of drinking water has been bettered in such a way that one can forsee for 1929 the abolition of all cisterns in houses. There has been established a good system for the flushing of the water in the sewers by means of sea water. Finally, the question of healthy habitations for the natives has been on foot. The sanitary situation of Dakar in 1928 has been perfectly satisfactory; and justifies the highest hopes for the future. No case of yellow fever or of pests has been reported during the course of the year."

MOSQUITO CAMPAIGN RETURN FOR 1928.

Week ending	Premises Visited.	Town—Lower				Town—Middle				Town—Upper				South				North Front				Totals
		Tubs	Barrels	Earthenware Vessels	Others	Tubs	Barrels	Earthenware Vessels	Others	Tubs	Barrels	Earthenware Vessels	Others	Tubs	Barrels	Earthenware Vessels	Others	Tubs	Barrels	Earthenware Vessels	Others	
7/1/28	184	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14/1/28	194	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21/1/28	190	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
28/1/28	178	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4/2/28	206	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11/2/28	2 2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1
18/2/28	186	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	2
25/2/28	206	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1
3/3/28	206	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10/3/28	198	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17/3/28	200	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24/3/28	198	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
31/3/28	201	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7/4/28	178	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14/4/28	207	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21/4/28	184	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	4
28/4/28	207	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1
5/5/28	252	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	2
12/5/28	796	...	...	...	...	...	...	...	...	3	...	...	1	...	2	...	2	...	...	...	...	8
19/5/28	777	1	...	1	1	3	1	...	3	2	...	...	...	1	...	...	...	...	...	...	...	13
26/5/28	715	...	...	1	...	3	...	...	...	4	...	...	...	...	...	...	1	...	...	...	...	9
2/6/28	735	...	...	1	...	1	...	...	...	1	...	...	...	...	...	...	3	...	...	...	...	6
9/6/28	716	...	...	1	...	3	...	...	1	5	...	...	...	1	...	...	1	...	...	...	19	31
16/6/28	735	2	...	1	2	2	...	...	...	11	...	...	2	2	...	...	1	1	...	...	12	36
23/6/28	687	2	...	...	...	2	...	...	...	2	...	...	...	1	...	...	3	...	...	...	...	10
30/6/28	675	3	...	...	...	4	...	2	...	4	...	...	1	2	...	...	3	...	...	...	...	19
7/7/28	678	4	...	...	3	6	...	...	1	...	...	...	...	1	...	...	...	...	...	...	2	17
14/7/28	627	...	...	4	...	1	...	3	1	3	...	...	...	...	...	...	2	...	...	...	...	14
21/7/28	610	2	...	2	...	6	...	1	...	1	...	...	...	...	...	...	2	...	...	...	...	14
28/7/28	677	3	...	2	1	5	1	...	3	3	...	...	...	...	...	...	...	...	...	...	2	20
4/8/28	519	2	...	1	6	2	...	1	...	...	...	...	...	2	...	...	...	10	4	...	11	39
11/8/28	642	1	...	...	...	8	...	2	2	5	...	...	1	1	...	...	...	...	...	...	...	20
18/8/28	761	2	...	...	1	6	...	...	1	46	4	2	1	...	...	...	1	...	...	1	...	65
25/8/28	809	1	...	...	2	3	1	...	1	16	...	...	1	2	...	...	...	...	...	...	...	27
1/9/28	835	...	...	3	4	18	2	...	3	13	...	3	...	1	...	...	1	...	...	...	6	54
8/9/28	809	1	...	3	3	8	...	...	...	19	...	3	...	3	...	...	...	...	...	...	...	40
15/9/28	838	1	...	2	2	5	...	...	2	16	...	1	1	...	...	...	1	...	...	...	...	31
22/9/28	835	1	...	5	1	4	...	1	...	1	...	...	2	1	...	...	...	...	...	...	...	16
29/9/28	849	1	...	3	3	6	...	4	5	2	...	3	...	...	...	...	4	...	...	...	...	31
6/10/28	855	...	1	2	1	2	1	13	4	26	3	6	2	1	...	...	1	...	...	...	...	63
13/10/28	836	...	...	2	10	1	1	2	6	19	...	2	1	7	1	1	5	...	...	...	...	58
20/10/28	842	1	...	2	4	1	1	1	1	15	...	...	1	...	...	...	...	...	...	...	...	27
27/10/28	870	...	...	3	5	6	...	1	2	12	...	3	1	1	...	...	...	...	...	...	...	34
3/11/28	485	...	...	1	1	2	...	...	1	8	...	...	...	...	...	...	...	...	...	...	...	13
10/11/28	245	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
17/11/28	235	1	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	3
24/11/28	250	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	2
1/12/28	244	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
8/12/28	246	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	4
15/12/28	249	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
22/12/28	252	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29/12/28	170	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30 & 31/12/28	41	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	24,722	30	1	41	55	108	8	31	37	238	8	23	17	27	3	1	41	11	4	1	55	740

Others include—Animal Drinking Troughs, Galvanized Iron Tanks, Galvanized Iron Baths, Surface Gullies. Empty Tins, Wells, Catchpits, Brackish Water Tanks, Buckets, Storm Water Drains Flower Vases. Concrete Tanks, Enamel Jugs, Boats, Sumps, Water Closet Cisterns, Grindstone Troughs, Washhouse Boilers, Underground Tanks, Iron Bins, &c., &c.

SUMMARY.

Tubs	4 4
Barrels	24
Earthenware Vessels	97
Others	205
Total	740

1st Offences	673
2nd ,, ...	47
3rd ,, ...	15
4th ,, ...	5

FLIES.

Considerable attention has been given during the year to the prevention of flies.

The following measures were found to be most useful.

Propaganda by leaflets and posters and by the local press.

The regular disinfection of stables during the summer months.

The double collection of house refuse during the summer.

The regular cleansing and flushing of cab stands. The prompt and satisfactory removal of horse manure.

The disposal of horse manure is a difficult problem in Gibraltar owing to the limited space available, and dumping in the sea is apt to foul the bathing beaches. A certain amount of manure is exported but accumulations are apt to occur and are difficult to deal with.

During the summer when the importation of manure to Spain was stopped, some difficulty was experienced in disposing of it, and the following methods were resorted to :—

(1) *Incineration.* A limited amount was dealt with by this method.

(2) *Dumping into sea.* Europa was found to be the only satisfactory place in the summer months, as otherwise during the bathing season the beaches become fouled.

(3) *Stacking.* A site was selected, between the Victoria Gardens and the race course, where a large amount of manure was stacked in pits and under strict supervision. This method was found to be satisfactory and the manure became available later on for use on the race course.

It is the fresh manure which is the fruitful source of fly-breeding and the regular removal and disinfection of stables has done much to reduce fly prevalence in Gibraltar.

It has been found that where peat or shavings are used as bedding, little or no fly breeding occurs.

During the year, especially in the warm weather, blue bottles, green bottles and flesh flies have been prevalent in certain localities and have been difficult to account for. The whole area in the vicinity has been frequently and carefully searched for breeding places, but it is possible that these flies come from considerable distances.

It is remarkable that certain houses harbour these flies whilst other houses in the vicinity remain quite free from them.

RAT REPRESSION.

Active measures against rats have been continued throughout the year. Two rat catchers are constantly employed on this important work. Trapping and poisoning are the methods employed, Barium Carbonate and Squil preparations are the poisons in general use. Rats are regularly submitted to the City Analyst for examination. The results obtained during the year are considered very satisfactory.

Rats Destroyed during 1928, by Districts (not including H.M. Dockyard).

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Total
South District	439	430	420	389	349	357	467	529	439	484	427	408	5,138
Town ,,	470	447	472	363	412	384	358	389	364	378	386	385	4,808
North ,,	106	104	88	167	164	210	164	151	157	161	162	156	1,790
Sheds and Warehouses Waterport Wharf and Commercial Mole	5	3	7	—	9	18	8	—	8	6	2	4	70
Total	1,020	984	987	919	934	969	997	1,069	968	1,029	977	953	11,806

Rats examined during 1928.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Total
Infected	—	—	—	—	—	—	—	—	—	—	—	—	—
Uninfected	12	9	12	12	9	9	12	12	9	9	6	15	126

Number of poisoned baits laid by Rat Catchers during 1928.

Jan-	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Total
9,477	9,001	9,361	8,012	8,807	9,227	9,630	10,009	8,715	9,799	9,085	8,646	109,769

Rats destroyed during 1928.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Total
Civil and Colonial Property	Trapped	1,008	973	980	914	922	958	979	1,057	956	1,011	966	941	11,665
	Poisoned	12	11	7	5	12	11	18	12	12	18	11	12	141
H.M. Dockyard	Trapped	197	154	118	97	128	98	90	92	83	87	83	94	1,321
	Poisoned	58	45	36	33	41	43	34	36	14	17	29	27	413
Total		1,275	1,183	1,141	1.049	1,103	1,110	1,121	1.197	1,065	1,133	1,089	1,074	13,540

DISINFECTION.

During the year 808 houses were disinfected on account of infectious diseases.

Bedding and clothing, &c., are disinfected by steam; books are disinfected by Formalin vapour.

Rooms are disinfected by the Formalin spray or by Formalin vapour.

Cleansing by soap and water and limewashing after disinfection are also advocated.

The disinfection of houses or rooms is always done by one particular man in the Public Health Department under the strict supervision of a Sanitary Inspector.

Schools are disinfected during holidays and on other occasions when necessary.

Stables are regularly disinfected by spraying during the summer months.

Month	Beds and Mattresses	Bolsters and Pillows	Blankets and Quilts	Sheets	Counterpanes.	Books.	Sundries.	Total.
January	60	93	94	50	6	—	252	555
February	35	46	47	41	—	—	114	283
March	42	80	251	69	—	40	156	638
April	41	71	69	70	—	2	160	413
May	37	75	70	71	1	—	151	405
June	246	392	352	334	—	—	562	1,886
July	396	519	401	351	—	—	517	2,184
August	280	341	272	283	17	2	366	1,561
September	86	79	60	75	5	—	97	402
October	121	219	181	198	—	—	189	908
November	30	45	40	48	4	—	107	274
December	48	51	48	42	4	—	113	306
Total	1,422	2,011	1,885	1,632	37	44	2,784	9,815

Premises disinfected for Infectious disease ...	808
Premises disinfected for Vermin	23
Total	831

AMBULANCE FACILITIES.

A new Motor Ambulance of modern design has now been provided. This has greatly increased the efficiency of the Ambulance service and provides every comfort for patients.

The old Motor Ambulance is being thoroughly renovated and will provide an efficient reserve, and will also be used for the conveyance of clothing for disinfection, thus saving much time and expense.

Cases removed in ambulance during the year :—

Local	41
Bay	46

DETAILS OF CASES REMOVED TO HOSPITAL BY AMBULANCE.

	Local	Bay
Fractures	5	7
Tuberculosis	4	1
Other causes	24	21
Influenza	—	4
Venereal Disease	—	2
Pneumonia	—	1
Diphtheria...	1	—
Enteric Fever	1	—
Chicken Pox	—	1
Maternity	1	—
Appendicitis	1	8
Dysentery	1	1
Measles	1	—
Erysipelas	1	—
Puerperal Fever	1	—
Total... ...	41	46

REPORT OF THE CITY ANALYST AND BACTERIOLOGIST.

The total number of specimens and samples of all kinds examined during the year 1928 were 4,020.

There was a marked decline in the number of Diphtheria swabs when compared with that of the previous year, the difference being 857. Apart from this the activities of the Laboratories have continued to increase. There was a small increase in the number of samples taken under the Food and Drug's Acts. The rate of adulteration of foodstuffs, &c., was higher and it is seen that skimmed goat's milk is chiefly responsible for this. In other classes of foodstuffs adulteration may be said to be less.

Pathological specimens continue to occupy much of the work.

Much time and work was expended in investigating the purity and manufacture of the aerated waters of Gibraltar.

The report is divided into three parts as follows:—

Part I. Food and Drugs—Public Health Ordinance.
Part II. Miscellaneous analyses.
Part III. Bacteriology and Chemical Pathology.

PART I—FOODS AND DRUGS.

The number of samples submitted under this heading was 178. These samples were purchased officially by Sanitary Inspectors with the necessary formalities. The following table shows the nature of the samples received:—

Article.	*Number examined.*
Cow's Milk	13
Goat's Milk	67
Butter...	8
Margarine	9
Lard	5
Spirits...	24
Tea, Coffee, Cocoa	6
Cereals	5
Sugar and Saccharine products ...	4
Olive Oil	6
Canned products	4
Ice Cream	3
Drugs...	19
Condiments	3
Miscellaneous	2
	178

The articles classified above were made up as follows:—

Tea, Coffee	Tea 3, Coffee 3.
Spirits	Whisky 5, Brandy 9, Gin 5, Rum 5.
Cereals	Peaflour 2, Wheat flour 2, Quaker Oats 1.
Canned products	Tinned Fish 2, Preserved Peas 2.
Condiments	Vinegar 3.
Miscellaneous	Sausage 1, Baking Powder 1.
Drugs	Mercury Ointment 2, Amon. Tincture Quinine 2, Tinct. Iodine 4, Seidlitz Powder 2, Spirits Chloroform 2, Boracic Ointment 2, Epsom Salts 2, Tartaric Acid 1, Citric Acid 1, Aspirin 1.

ADULTERATED SAMPLES.

The number of samples found to be below the standards set out in the Public Health Ordinance was 31 or 17·4 per cent.

For comparison the number below the standard for 1927 was 14·8 per cent. and for 1926 was 13·1 per cent.

In all cases where the City Council considered it advisable legal proceedings were instituted against the vendor.

The number of convictions obtained was six which is three less than last year.

Total fines amounted to £33; also costs £6 18 0, total £39 18 0.

One milk vendor's licence was cancelled for repeated adulteration.

PARTICULARS OF ADULTERATED SAMPLES.

GOAT'S MILK CONTAINING ADDED WATER.

Lab. No.	Non-Fatty Solids per cent.	Added water per cent.	Remarks.
871	7·01	10	Fined £5 and £1 3 0 costs.
1873	5·56	34	do. do.
1867	6·24	20	do. do.

The statutory limit is 8·0 per cent. for non-fatty solids in Goat's Milk.

GOAT'S MILK SHOWING BOTH ADDED WATER AND FAT ABSTRACTION.

Lab. No.	Deficient in Fat per cent.	Added water per cent.	Remarks.
1965	34	21	Fined £5 and £1 3 0 costs.
1967	24	17	Fined £10 and £1 3 0 costs.

GOAT'S MILK WHICH CONTAINED UNBOILED MILK.

Lab. No.	Estimated amount of unboiled milk present per cent.	Remarks.
1684	100	In other respects genuine.
1864	100	Fined £3 and £1 3 0 costs (genuine in quality).
2114	5	Also fat deficiency = 34 per cent.

DRUG SAMPLES NOT ACCORDING TO STANDARD.

Lab. No.	Article.	Nature of Ingredients.
2226	Tinct. Iodine.	Iodine deficient = 6 per cent.
2221	Tinct. Iodine.	Iodine in excess of B.P. 3·5 per cent.

GOAT'S MILK DEFICIENT IN MILK FAT.

Lab. No.	Milk fat.	Deficiency in fat per cent.	Remarks.
247	3·3	5	Declared skimmed.
249	3·3	5	,,
657	3·0	14	,,
877	2·9	17	,,
1685	2·6	25	,,
1842	2·2	37	,,
1843	2·2	35	,,
1931	2·6	25	,,
1930	2·6	25	,,
1929	2·6	25	,,
1965	1·8	34	,,
1969	2·6	24	,,
1967	2·1	24	,,
1968	2·7	21	,,
1966	2·6	24	,,
1964	2·7	22	,,
2114	2·3	34	,,
2115	3·1	10	,,
2116	2·9	17	,,
2118	2·9	17	,,
2113	3·1	10	,,
2152	2·3	34	,,
2154	3·2	8	,,
2150	3·3	5	,,

The statutory limit for milk fat in Goat's milk is 3·5 per cent.

AVERAGE COMPOSITION OF MILKS.

The average composition of Goat's milk was :—

Fat	4·16	present.
Non-fatty solids	9·01	,,

The average composition of Cow's milk was :—

Fat	4·07	present.
Non-fatty solids	8·90	,,

These figures are well above the statutory limits for Gibraltar.

No preservative or colouring matter was found in any sample of milk examined.

DRUGS.

All the samples of drugs received were found to be genuine with the exception of two samples of Tinct. of Iodine. It cannot be thought that deliberate adulteration was practised but rather that the drugs in question had been somewhat carelessly made. In one case there was a deficiency in the iodine content of 6 per cent. on the "British Pharmacopœia" requirements, while in the other there was a little iodine in excess.

GOAT'S UNBOILED MILK.

As a large proportion of Gibraltar's milk supply comes from Spain, over which the Council has no control, the only protection against introducing milk borne diseases (Typhoid, Undulant fever, &c.) is by boiling the milk before vending. This is a wise and necessary precaution. The offering or exposing for sale of unboiled imported milk is a serious offence and one with which the magistrates deal severely. Among last year's samples two milks were found not to have been boiled, and a third sample showed some contamination with unboiled milk amounting to about five per cent. Though this amount is small, in my opinion, the practice of selling milk contaminated with a little unboiled milk is an equally serious offence as the whole bulk would quickly become infected with the rapidly multiplying virulent organisms, especially is this so in the warmer months.

OLIVE OILS.

I am pleased to report the continued improvement in the quality of olive oil sold in Gibraltar. Although only six samples were submitted for analysis there was no sample with an outstanding high acidity content.

Sample.	*Acidity per cent.*
1	2·42
2	2·23
3	1·67
4	2·74
5	2·12
6	1·98

These figures are normal for olive oils of good quality. The year before last attention was drawn to the high proportion of acidity found in many of the samples. This acidity reached nearly 20 per cent. Olive oil for edible purposes should not exceed 5 per cent. acidity.

SPIRITS.

Twenty-four samples of Whisky, Brandy, Rum and Gin were examined and all were found to have conformed with the statutory regulations, viz., that these spirits shall not be reduced with water below 25 degrees underproof. It would appear that the gross adulteration of spirits which occurred two years ago is not now generally practised.

GOAT'S MILK—SKIMMED.

The question of the skimming of goat's milk by dairy men during or after the process of boiling has received the attention of this Department for a long time. The principle effect of skimming is to partly rob the milk of its valuable fat, and milk sold to the public is found to be below the statutory limit in this ingredient. The deficiency of fat in these skimmed milk samples averaged 20·7 per cent. The largest amount of abstracted fat being 37 per cent. Full retail price was charged for all skimmed milk. Children and invalids would be the greatest sufferers. The number of samples grossly adulterated in this way has steadily increased in recent years and it seems now to have become the general practice.

Year.	*Percentage of samples skimmed.*
1924	4
1925	13
1926	11
1927	17
1928	36

This means that for last year (1928) out of 67 samples of goat's milk examined no less than 24 were deficient in milk-fat. When samples are taken for analytical purposes by the inspectors, it is the general rule for the vendors to declare that the milk has been skimmed. By so doing they have learnt to evade the law, for, a test case brought before the

High Courts a few years ago was awarded to the vendor. Researches by the City Analyst have shown that the fat which quickly rises to the surface of hot milk can easily be worked back again into the bulk of milk when cold, and analyses made before and after the experiments proved very little difference, if any, in the fat and non-fatty solids contents. In view of the large increase in this malpractice of skimming in recent years it was thought desirable that amendments to the existing Ordinance should be framed to protect the public and assure it of getting full quality milk.

METALLIC CONTAMINATION OF AERATED WATERS.

A systematic examination of the aerated waters manufactured by the six businesses in Gibraltar was conducted in these laboratories during the latter part of the year. Results showed that while some were free, or nearly so, of metallic impurities others contained noxious and at times dangerous amounts of lead. Government bodies have restricted the amount of lead in foodstuffs and drugs and the amounts allowed, though very small, would appear to have some relation to the quantity and frequency of the article taken.

It is different in the case of drinking waters, including aerated waters and even traces of lead are objectionable for "lead is an accumulative poison and the continued introduction of minute quantities into the system produces a chronic state of poisoning" (Moor and Partridge). Another authority (Thresh) states that "water containing the slightest trace of this metal is fraught with danger." More than 1/50 of a grain of lead per gallon in water should be considered objectionable and the water condemned. Some of the bottles of soda water examined far exceeded this figure and contained at times ½ grain per gallon from one factory and ¼ grain from another. Another factory's soda water contained at times 1/10 grain of lead per gallon associated with traces of copper. In yet another instance although the soda water was found to be free from lead, lemonade manufactured in the same factory was contaminated. Four of the six factories therefore were manufacturing aerated waters contaminated with dangerous amounts of lead. Visits of investigation were paid to the factories in question and many samples including drinking water, wash water, piping, deposits, etc., were analysed with the object of tracing the source of the impurity. The origin of the lead in two of the factories was traced to the use of lead piping to connect the carbonator or mixer with the bottle filling apparatus, and through which the soda water under pressure passed, taking up lead in transit. This was proved possible by experiments conducted in these laboratories. The cause of contamination of lemonade of another factory was found to be due to conducting the acid lemon juices through lead pipes—tin pipes being used for the manufacture of the soda water. The source of the contamination in the fourth factory is of special interest in so far that although tin piping was used throughout the factory lead was getting into the soda water from lead containing solder on the mixer. The dismantled apparatus also revealed a badly corroded copper ball float which explained the presence of copper in addition to lead in the manufactured article.

In connection with the investigation all tin piping of the factories was analysed for the possible presence of lead with negative result.

Now that the harmful lead pipes have been replaced by tin ones it is hoped that much of the dangerous contamination of the Gibraltar aerated waters has been eliminated.

The owners of the factories courteously gave all necessary assistance in these investigations with a keen desire to have their products brought to the recognised degree of purity.

TEA.

Three samples were examined all of which agreed with the analytical constants of genuine tea. Foreign leaves could not be found. One sample was a green tea (gunpowder) which was refused admission in United Kingdom. The following figures obtained compared with those of genuine tea. Moisture 7·60, Ash 8·13, Water soluble ash 3·70, Alkalinity of soluble ash 1·40, Sodium Chloride 0·09, Silicious matter 1·14, Water soluble extract 50·88. No foreign leaves were found and Arsenic which is sometimes used as spray was not detected.

PART II—MISCELLANEOUS SAMPLES.

Samples under this heading examined during the year numbered 253 :—

63 samples of water from public fountains for saline content, &c.

7 samples of Tank boat waters to determine if contaminated with sea water.

1 sample Distilled water for chemical and bacteriological analysis.

1 sample Condenser water for cause of opalescence.

3 samples Water for saline content.

3 samples Water for bacteriological and chemical analysis —Andalusia Water Co., Spain.

20 samples Water for bacteriological examination for H.M. Dockyard

1 sample Water for opalescence and bacteriological purity.

1 sample Atlas boiler preservative for composition.

7 samples Coal for chemical analysis and calorific power.

1 sample Sugar—Examination for purity.

2 samples Spanish bread—Examination for purity.

1 sample Formalin to determine strength.

5 samples varied tinned Jellies, Meat Extract, &c.—for evidence of decomposition.

1 sample Bees wax—for estimation of lead.

1 sample Methylated spirits—for nature of admixture.

1 sample Soya bean oil—for purity.

1 sample Cacahuet oil—for purity.

2 samples Sugar (1) "damaged," (2) "undamaged"—to determine if damaged by sea water.

2 samples Cardboard box (1) "damaged," (2) "undamaged,"—to determine if damaged by sea water.

2 samples Sacking—for estimation of moisture.

2 samples Sugar—to determine if damaged by sea water.

7 samples Methyl Alcohol—analysis for purity.

2 samples Maize—for moisture content.

2 samples Maize—to determine if damaged by sea water.

1 sample Soya bean oil—to report if suitable for domestic use.

2 samples Bread } Investigation as to cause of smell
1 sample Disinfectant } and taste.

1 Knife—to test for presence of blood.

2 samples Cow's milk—for analysis and evidence of abnormality.

3 samples Cow's milk—for chemical and bacteriological analysis.

6 samples Flour—for analysis (Military Authorities).

1 sample Material found in carrot—identification of drug.

1 sample Stomach contents of donkey—for toxicological examination.

63 samples in connection with the investigation of purity of aerated waters from six factories.

1 sample Electric cable } To investigate cause of
1 sample Deposit from cables } corrosion of lead sheeting.

16 samples Bacteriological cultures in connection with sterilising experiments at Colonial Hospital.

15 samples Weights—to be retested and corrected—from H.M. Dockyard.

TANK BOAT WATERS.

Watering Jetty water for boiler use, and Gibraltar drinking water is placed in tank boats and supplied to shipping. A watch is kept by the Public Health Department lest sea water gain access to these tank boats and cause pollution. Analysis of these waters is undertaken from time to time to determine the presence of extraneous sea water. Five samples were examined for salinity with the following results:—

TANK BOAT SAMPLES,

Chlorine in parts per 100,000.

Jetty water (control)	2	19	26
27·0	32·5	27·0	27·0
Drinking water (control) ...	5	7	
7·60	7·6	11·6	

Tank boat No. 2 somewhat exceeded in chlorine content the amount in the normal boiler water and it is suspected that splashings of sea water or deck washings gained access to the water in this tank.

Tank boat No. 7 containing drinking water also shewed a little higher proportion of chlorides from the same cause.

ANTHRAX.

Six blood smears were submitted by the Veterinary Adviser to the City Council to be examined for Anthrax. These were smears taken from various animals which had been found dead from time to time. B. Anthracis was not found in any smear. Last year Anthrax was found in three of the blood smears examined.

TOXICOLOGICAL EXAMINATIONS.

(1) Viscera of donkey, submitted by Veterinary Surgeon. Cyanides Oxalates, Arsenic, Antimony and Alkaloids not found.

(2) White powder, suspected drug, sent by Veterinary Surgeon. The substance weighed 77 grains and was found to be Caffeine Citrate.

(3) Knife sent by Chief of Police with request that it be examined for traces of blood. Blood was not detected.

(4) Sample of loaf of bread, to determine cause of peculiar smell. The bread was found to contain traces of the disinfectant "Zotal"—accidental contamination.

VETERINARY.

(1) Horse blood smear for piroplasmosis—not found.
(2) Pus from donkey—Tubercle B. and Actinomycosis not found.
(3) Tongue of ox—Actinomycosis present.
(4) Cow's milk for Tubercle B.—not found.
(5) Cow's milk for Tubercle B.—not found.
(6) Cow's milk for Tubercle B.—not found.
(7) Kidney of mule for malignant tumour—not found.
(8) Pus from horse—Cocci present.

PART III.—BACTERIOLOGY AND PUBLIC HEALTH WORK.

3,512 samples and specimens were examined during the year on behalf of the City Council, Naval and Military Authorities, Colonial Hospital and the general practitioners of Gibraltar.

These are classified as below:—

	No. of Specimens.
Drinking waters and others	281
Swabs for B. Diphtheriæ, Vincent's organisms	563
Sputum for Tubercle Bacillus, &c.	179
Blood for Enteric and Undulant Fever (Widal)	227
Blood counts—Hb, red cells, white cells, differential count	28
Blood for Malaria Parasites	43
Blood Cultures	16
Blood Sugar estimations	50
Blood urea estimations (including urea concentration factor)	8
Blood for Venereal disease (Wassermann) ...	375
Cerebro-Spinal Fluids, Cytology, Globulin, Sugar, Micro-organisms, and Wassermann...	16
Urine, urea content (including urea concentration test)	19
Urines chemical analysis and bacteriological...	1,104
Pus for Gonococci and other organisms ...	42
Fæces for Typhoid and Dysentery bacilli ...	125
Breast milk analysis	27
Serum for T. Pallidum (dark ground)	14
Goat's blood for Undulant fever (Widal) ...	209
Rats for plague	126
Histological (cutting, staining and mounting)...	6
Gastric contents	15
Pleural Fluids (Cytology, organisms)	11
Miscellaneous	28
	3,512

Miscellaneous specimens include—Urines for Acetone and

Diacetic acid, bile pigments, Tubercle B., Acidity, Teeth cavities for organisms, Intestinal parasites, Calculus analyses, Skin scrapings for B. Lepræ, Ox tongue for Actinomycosis, Tape worms, &c.

Three hundred and eighty-seven gallons of distilled water were made and sold.

Twenty Anti-typhoid inoculations were done in the Laboratory.

AUTOGENOUS VACCINES.

The number of Autogenous vaccines prepared during the year was 60. These were in connection with cases of Cystitis, Eczema, nasal and bronchial catarrh and defective teeth.

The causative organism after being obtained in pure culture is dispensed in ampoules in series of increasing doses.

STOCK VACCINES.

The number of Stock vaccines dealt with was 28. These stock vaccines are kept in the Laboratory and when requested are diluted and dispensed in ampoules in series of increasing doses.

ANIMAL INOCULATIONS.

Three guineapig inoculations were done to determine presence of T.B. or virulence of B. Diphtheriæ.

(1) Pleural Fluid—for presence of Tubercle B. The animal remained unaffected.

(2) Urine—for presence of Tubercle B. The animal remained unaffected.

(3) B. Diphtheriæ—obtained from throat swab. This organism was proved to be non-virulent.

GOATS.

The serological agglutination test was carried out on the 209 goats living on the "Rock." All gave negative results for Undulant Fever.

RATS.

One hundred and twenty-six rats which were caught in Gibraltar or on the Quay sides were examined for the bacillus of plague. All were free.

BLOOD SUGAR ESTIMATIONS.

During the year 50 estimations of sugar in blood were done. One patient presented herself for the complete sugar tolerance test for the diagnosis of diabetes. The rest were individual tests made on diabetic patients for the control of insulin treatment. Macleans method was used.

The results of the sugar tolerance test of this patient is given for interest.

The marked defect in the capacity to store the sugar indicates a diabetic condition.

Traces of sugar were found in the urine during the test, but sugar was found in urine previously.

Blood sugar before giving 50 gms. of sugar per cent.	Blood sugar after giving 50 gms. of sugar per cent.				
	½ hr.	1 hr.	1½ hrs.	2 hrs.	2½ hrs.
0·115	0·156	0·181	0·185	0·174	0·153

PLEURAL FLUIDS.

Cytology and Bacteriological examinations were carried out on all specimens. Eleven specimens were received with the following Laboratory findings :—

No.	Nature of Cells.	Organisms.
1	Many, chiefly Polymorphs.	Streptococci.
2	Many, Lymphs 60 per cent., Poly. 40 per cent.	Not found, probably tubercular.
3	Lymphocytes only.	Not found, probably tubercular, T.B. found in sputum.
4	281 per c.m.m., all Lymphs.	Not found, probably tubercular.
5	Many, all Lymphs.	Not found, probably tubercular.
6	Chiefly Polymorphs, many.	Pneumococci.
7	1,265 per c.m.m., chiefly Polymorphs.	Not found.
8	Some flat Endothelial cells grouped in plates.	Not found, passive pleural effusion, heart.
9	Many, Polymorphs only.	Pneumo bacilli of Friedlander (predominating) : Streptococci.
10	Many, Lymphocytes 96 per cent.	Not found, probably tubercular.
11	437 per c.m.m., Lymphocytes 95 per cent.	Not found, probably tubercular.

It is not common to find Tubercle B. in Pleural fluids. The absence of organisms and the presence of Lymphocytes strongly points to a tubercular condition.

THE EXAMINATION FOR B. DIPHTHERIÆ.

In the examination of throat swabs for B. Diphtheriæ Klebs-Loeffler bacillus only was considered, Hoffmann bacillus being disregarded. There were 563 swabs submitted and from these 25 diphtheria cases (affected throats with presence of K.L.B.) were diagnosed in the City Laboratories by bacteriological methods.

Contact swabs:—The number of contact swabs taken and examined in connection with the above cases of Diphtheria numbered 122 of which 4 showed the presence of B. Diphtheriaæ. The percentage of positive contact swabs was therefore 3·3.

During the previous year 1,417 swabs for diagnostic purposes were examined and of these 75 were positive for B. Diphtheriæ.

VINCENT'S ANGINA.

The organisms of Vincent's Angina were found in the direct smear examinations of three swabs. They were found in five swabs the previous year.

TUBERCLE BACILLUS.

Sputum:—In 21 (*i.e.* 11·7 %) of the 179 specimens examined the diagnosis of tuberculosis was confirmed by finding the organism in the sputum. For the previous year the number was 29 or 15·1 per cent.

RENAL EFFICIENCY TESTS.

Urea Concentration Factor:—In connection with renal disease the estimation of blood urea to the urine urea content was conducted on eight patients. Maclean's modification of Marshall and Van Slyke's method was used.

Urea Concentration Test:—The estimation of urea in urine one hour and two hours after giving fifteen grams of urea was done on 19 patients. The sodium hypobromite method with Dupre's ureometer was used.

CEREBRO-SPINAL FLUIDS.

Cytology, Globulin test, and bacteriological examinations are systematically carried out on all specimens received. When especially indicated the amounts of sugar, urea, and Sodium Chloride are determined and the Wassermann test done.

Of the ten specimens received, four were found to be normal fluids. Of the two examined by Wassermann reaction for Sy. Meningitis one was positive.

The Laboratory findings of the remainder five specimens are given in the following table:—

CEREBRO-SPINAL FLUIDS.

No.	White cells per c.m.m.	Nature of cells.	Sugar mgms. in 100 c.c.	Globulin.	Organisms found.	Laboratory findings.
1	5	Lymphs.	0·070	Large excess.	None.	Urea = 63 milligrams } in 100 c.c. Sod. Chloride 740 mgms. } in 100 c.c. Age 42 years. Wassermann neg.
2	94	75% Lymphs. 25% Polymphs.	None.	Large excess.	None.	T.B. not found but probably T.B. infection. Age 7 years.
3	4624	93% Polymphs. 7% Lymphs.	Traces only.	Large excess.	Meningococci	Meningococcus Meningitis.
4	296	70% Lymphs. 30% Polys.	0·03 approx.	Small increase over normal.	None.	T.B. not found but probably tubercular infection. Age 9 years.
5	5	Lymphs.	0·075	Normal.	Sterile.	Child died of Septicæmia.

NOTIFIABLE DISEASES.

The table given below shows the number and nature of specimens examined and the results obtained in connection with notifiable diseases, Venereal diseases, etc.

	Total.	Positive.	Negative.
Blood for Venereal Disease (Wassermann)	375	105	270
Cerebro-Spinal Fluid (Wassermann)	16	2	12
Cerebro-Spinal Fluid for T.B.		—	
Cerebro-Spinal Fluid for Meningococcus		2	
Pus for Gonococci	40	15	25
Serum for T. Pallidum	14	2	12
Sputum for Tubercle B.	179	21	158
Swabs for B. Diphtheriæ	563	83	477
Swabs for Vincent's Organisms		3	
Blood culture for Enteric Fever and Mic. Melitensis	16	—	16
Widal reaction :—			
B. Typhosus	227	19	201
B. Paratyphosus A.		4	
B. Paratyphosus B.		2	
Mic. Melitensis		1	
Fæces :—			
B. Typhosus	125	4	102
B. Paratyphosus A.		1	
B. Paratyphosus B.		1	
B. Dysenteriæ Flexner		10	
B. Dysenteriæ Shiga		1	
Special Organisms, i,e., Coliform		1	
B. Aertrycke		1	
Ova Trich. Dispar.		4	
Blood smears for Malaria	37	9	28
Blood smears for Anthrax	6	—	6
Pleural Fluids :—			
Pneumococci	11	2	8
Pneumobacillus of Friedlander		1	

Swabs for B. Diphtheriæ include convalescents and contacts.

Fæces for Enteric group include convalescents.

DRINKING WATERS AND OTHERS.

These include samples taken from Moorish Castle and Willis's Road 68; Governor's Parade Fountain 12; Brackish water 11; Sea water 11; Underground Tanks and Wells 143; North Front Wells 11; Watering Jetty water 11; Catalan Bay Wells 14.

Tables showing the monthly analysis of Gibraltar drinking water, North Front Wells, Watering Jetty water for boiler use, Sea water, and Brackish water follows this report.

DISTRIBUTION OF SPECIMEN.

For record purposes all specimens and samples examined during the year can be allocated as follows :—

From Military Authorities 510, from Naval Authorities 192, from Colonial Hospital 549, from Spain (other than Gibraltarians) 163, and from Civil (including general public and City Council) 2,621—Total 4,035.

EQUIPMENT.

At the request of the Naval Authorities that the testing for inflammable gases in oil carrying ships shall be undertaken by the City Analyst the Clowes-Redwood special apparatus has lately been installed at the Laboratories for this purpose.

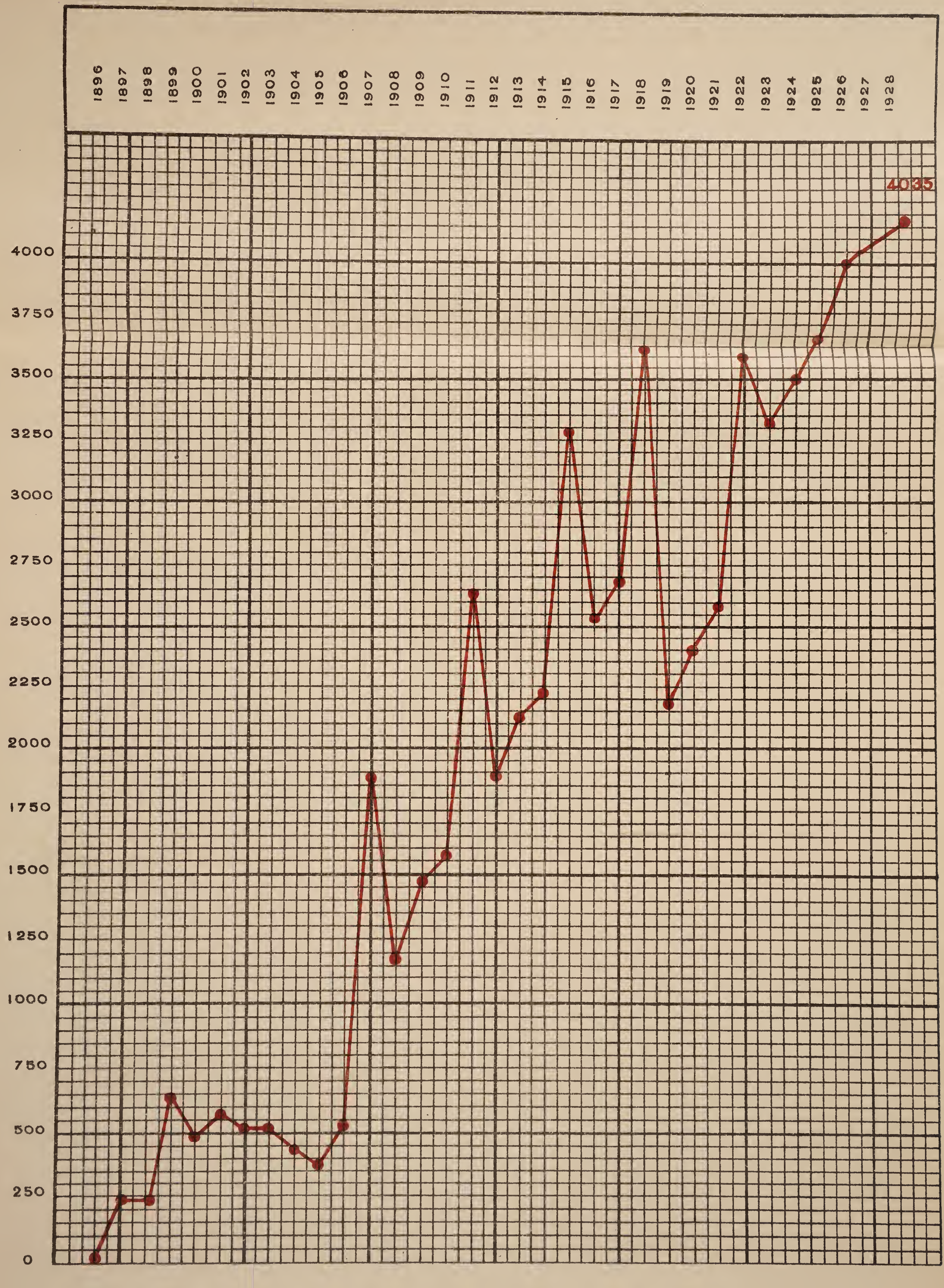
A. G. Holborow, F.I.C.,
City Analyst and Bacteriologist,
Gibraltar.

DISTRIBUTION OF SPECIMENS.

Nature of Specimen.	Civil.	Military.	Navy Received from Military Hospital.	Navy.	Spain.	Colonial Hospital.	Total.
Blood, Wassermann	128	2	4	83	25	133	375
Blood Count	17	5	...	...	2	4	28
Blood Culture	...	9	2	...	...	5	16
Blood Sugar	21	...	...	...	11	18	50
Blood Urea	6	...	...	...	...	2	8
Blood, Widal	141	61	1	...	7	17	227
Blood, Malaria	20	13	...	3	4	3	43
Goats' blood for Mic. Melitensis	209	...	...	...	...	...	209
Swabs for K.L.B., &c. ...	279	127	8	18	1	130	563
Sputum	89	8	1	2	14	65	179
Urine	907	29	7	...	80	81	1,104
Fæces	20	68	3	2	1	31	125
Cerebro-Spinal Fluid	2	...	2	...	...	12	16
Pus (gonococci)	28	2	...	...	3	9	42
Serum for T. Pallidum ...	1	...	...	13	...	...	14
Human Milk	25	1	...	...	1	...	27
Histological	1	4	...	...	...	1	6
Gastric contents	1	12	...	...	1	1	15
Rats for Plague	126	...	...	...	...	...	126
Food and Drugs Act	178	...	...	...	...	...	178
Other Food & Drinks, &c. ...	97	15	...	...	2	...	114
Waters	235	123	...	20	2	...	380
Pleural fluids	3	1	2	...	...	5	11
Auto-Vaccine	32	17	2	1	3	5	60
Stock Vaccine	17	4	...	...	6	1	28
Guineapig Inoculation ...	1	3	...	...	...	...	4
Urine for Urea concentration	9	4	...	...	...	6	19
Coal	7	...	...	...	...	...	7
Agar Culture Esterlization...	...	...	...	...	...	18	18
Miscellaneous	21	2	...	18	...	2	43
Total	2,621	510	32	160	163	549	4,035

CITY COUNCIL OF GIBRALTAR.

CHART SHOWING NUMBER OF SAMPLES ANALYSED PER ANNUM SINCE THE YEAR 1896.



MONTHLY ANALYSES OF GIBRALTAR DRINKING WATER DURING 1928.

Date.	Parts per 100,000.				B. Coli.
	Total Solids	Chlorine	Temporary Hardness	Permanent Hardness	
31/ 1/28	14·0	4·0	3·0	nil	not found in 25 c.c.
29/ 2/28	10·0	2·1	2·5	nil	present in 25 c.c.
31/ 3/28	10·0	2·4	2·5	nil	not found in 25 c.c.
30/ 4/28	10·0	2·2	3·0	nil	do.
31/ 5/28	9·5	2·5	4·0	nil	do.
30/ 6/28	7·5	2·4	4·0	nil	do.
31/ 7/28	11·0	3·8	4·0	nil	do.
27/ 8/28	11·0	3·8	3·5	nil	present in 5 c.c.
28/ 9/28	—	2·4	4·0	nil	not found in 25 c.c.
31/10/28	10·0	2·3	3·8	nil	do.
29/11/28	—	9·0	—	—	—
3/12/28	—	9·6	—	—	present in 10 c.c.

RESULT OF MONTHLY ANALYSES OF WELL WATER.

SAMPLES TAKEN AT NO. 5 WELL, NORTH FRONT.

Date	Parts per 100,000.				B. Coli
	Total Solids	Chlorine	Temporary Hardness	Permanent Hardness	
31/ 1/28	55·0	8·0	20·0	10·0	not found in 25 c.c.
29/ 2/28	56·0	8·0	20·0	10·0	do.
3/ 3/28	—	7·4	—	—	do.
30/ 4/28	—	8·4	—	—	do.
31/ 5/28	56·0	8·6	20·0	10·0	present in 10 c.c.
30/ 6/28	56·0	7·2	18·0	10·0	do.
31/ 7/28	67·0	10·4	17·0	10·0	do.
27/ 8/28	65·0	10·1	17·0	10·0	do.
28/ 9/28	—	5·6	—	—	not found in 25 c.c.
31/10/28	—	5·8	—	—	present in 25 c.c.
3/12/28	—	5·0	—	—	not found in 25 c.c.

RESULT OF MONTHLY ANALYSES OF BRACKISH WATER.

SAMPLES OBTAINED FROM MAIN IN GOVERNOR'S STREET.

Date	Parts per 100,000.				B. Coli
	Total Solids	Chlorine	Temporary Hardness	Permanent Hardness	
31/ 1/28	1,080·5	520·0	20·0	180·0	present in 1 c.c.
29/ 2/28	1,050·0	510·0	20·0	160·0	„ 0·1 c.c.
31/ 3/28	1,050·0	510·0	21·0	150·0	„ 0·1 c.c.
30/ 4/28	—	560·0	—	—	„ 0·1 c.c.
31/ 5/28	1,285·0	600·0	21·0	155·0	„ 0·1 c.c.
30/ 6/28	1,350·0	610·0	21·0	156·0	„ 0·1 c.c.
31/ 7/28	1,300·0	690·0	22·0	155·0	„ 1 c.c.
27/ 8/27	1,290·0	690·0	21·5	155·0	„ 1 c.c.
28/ 9/28	—	680·0	—	—	„ 1 c.c.
31/10/28	—	610·0	—	—	„ 1 c.c.
3/12/28	—	620·0	—	—	„ 1 c.c.
Average	1,200·7	600·0	20·9	158·7	—

RESULT OF MONTHLY ANALYSES OF SEA WATER.

Date	Parts per 100,000.				B. Coli
	Total Solids	Chlorine	Temporary Hardness	Permanent Hardness	
31/ 1/28	4,420·0	2,020·0	12·0	450·0	present in 0·1 c.c.
29/ 2/28	4,310·0	2,010·0	12·0	435·0	„ 0·1 c.c.
31/ 3/28	—	2,000·0	—	—	„ 0·1 c.c.
30/ 4/28	—	2,050·0	—	—	„ 0·1 c.c.
31/ 5/28	5,960·0	2,070·0	11·0	420·0	„ 0·1 c.c.
30/ 6/28	4,330·0	1,940·0	11·0	420·0	„ 0·1 c.c.
31/ 7/28	4,310·0	2,060·0	12·0	410·0	„ 0·1 c.c.
27/ 8/28	4,300·0	2,050·0	12·0	400·0	„ 1 c.c.
28/ 9/28	—	2,000·0	—	—	„ 1 c.c.
31/10/28	—	1,980·0	—	—	„ 1 c.c.
3/12/28	—	2,000·0	—	—	„ 1 c.c.
Average	4,605·0	2,016·3	11·6	422·0	—

RESULT OF ANALYSES OF BOILER WATER.

SAMPLES TAKEN AT WATERING JETTY.

Date	Parts per 100,000.				B. Coli
	Total Solids	Chlorine	Temporary Hardness	Permanent Hardness	
31/ 1/28	120·0	28·0	40·0	12·0	present in 10 c.c.
29/ 2/28	95·0	17·5	30·0	10·0	,, 5 c.c.
31/ 3/28	—	16·0	—	—	,, 5 c.c.
30/ 4/28	106·0	24·0	—	—	,, 10 c.c.
31/ 5/28	111·0	27·0	37·0	10·5	,, 2 c.c.
30/ 6/28	111·0	26·4	36·0	10·0	,, 10 c.c.
31/ 7/28	77·0	34·4	38·0	9·5	,, 5 c.c.
27/ 8/28	76·0	32·5	37·5	9·0	,, 2 c.c.
28/ 9/28	—	31·0	—	—	,, 2 c.c.
30/10/28	79·0	32·0	36·0	10·0	,, 5 c.c.
3/12/28	—	28·6	—	—	,, 2 c.c.
Average	96·7	26·8	36·3	10·1	—

SANITARY CIRCUMSTANCES OF THE DISTRICT.

Much of the information given in this section of the Report has been kindly supplied by the City Engineer (Mr. W. H. Pearce, M.C., A.M.I.C.E., F.S.I.).

WATER SUPPLY.

Three classes of water are provided by the City Council of Gibraltar, viz.:—(*a*) Potable Water, (*b*) Brackish Water, (*c*) Boiler Water.

(*a*) *Potable Water.*

The potable water which is supplied to the public and to mercantile shipping arriving at the port of Gibraltar is caught on catchments directly from the rainfall, viz., there are no wells, springs or streams.

Most private houses also are provided with an underground storage tank and pump, and roofs or portions thereof are set apart as rain water catchments areas. The number of houses provided with storage tanks is between 600 and 700 with a total private storage capacity of nearly 8,000,000 gallons.

This latter provision, however is not sufficient in itself, and in consequence thereof, the City Council has provided extensive public work for the collection, storage and distribution of potable water.

The water is collected upon enclosed, isolated natural and artificial catchment areas of some 35 acres in extent, and is stored in five large reservoirs which are constructed in tunnels inside the Rock of an aggregate storage capacity of 7 million gallons of water. Additional storage capacity to the extent of 1,271,000 gallons is provided by a service reservoir situated at a lower level and near Moorish Castle.

The distributing system of potable water is by gravitation, no machinery of any description being employed. The whole system of inflow and distribution is controlled by specially designed weirs and valves and numerous works, automatic in action and otherwise, are provided, which reduces risk.

The Waterworks are so administered that the minimum possible quantity of water is run to waste, careful manipulation being exercised in running rain water into the Brackish Water reservoirs, thus avoiding wastage during the rainy season through lack of storage capacity in the Potable Water reservoirs, and incidentally, effecting a saving in the pumping costs of Brackish Water and improving its quality by dilution.

In the year 1928 quarrying operations in the heart of the rock were commenced for providing space for an additional potable water reservoir of 2,000,000 gallons capacity. It is proposed to continue these operations every year to such an extent as stone is required for road, building and other public works. The actual construction of the proposed reservoir will be considered when the requisite space has been quarried and tunnelled out.

Potable Water is laid on direct to many houses, but the largest supplies are drawn from public fountains (supply points), situated at different parts of the City from which water is issued on payment by public water checkers.

In addition, the City Council supplies water by butts and by temporary piping.

Extension and improvements to the distributing system of pipes are continually being effected. During the year 1928 new public "fountains" have been erected at Shakery's Passage, Giro's Passage and Hospital Steps and the mains extended.

The delivery of potable water to the Commercial Shipping is affected by means of private tank boats which obtain their supplies through the Council's hydrants and meters situated on the wharves.

The Council's potable water is subjected to full analysis at frequent intervals, and it is endeavoured to store all water for at least a fortnight, before distribution to the public. All distribution vehicles, butts, barrels, &c., are periodically disinfected at the Council's Disinfecting Station.

The quantity of rain water collected from the Council's areas during 1928 was 9,462,756 gallons exclusive of an estimated quantity of 1,400,000 gallons run into Brackish Water Reservoirs and to waste, due to lack of storage capacity during heavy rain.

The quantity disposed of from the Council's Potable Water Reservoirs during the year amounted to 11,328,600 gallons, which quantity was distributed as follows :—

(*a*) To Shipping...	1,811,640 gallons
(*b*) To the Public, &c.	9,516,960 ,,

The difference between this total and that of the rain water collected being the difference in stock at the end of the year 1928 as compared with that at the end of the previous year.

The price at which the water was sold by the Council is as follows :—

To the Shipping, at 2/- per 100 gallons.
To Factories, Hotels, Private Houses, &c., at 1/3 per 100 gallons.

To Cattle Sheds, Electricity Works, and Pumping Stations, at -/10 per 100 gallons.

From "Fountains" delivered in butts, at 3/- per 100 gallons.

Drawn at "Fountains" (undelivered), at -/10 per 100 gallons.

(b) *Brackish Water.*

Brackish Water is used in Gibraltar for baths, flushing of sanitary conveniences, gullies, &c., fire extinguishing purposes, road watering and general sanitary purposes.

This water is obtained from a number of comparatively shallow wells situated in the low lying district of North Front, and the supply is considerable.

During the rainy season, the water is comparatively fresh, but during the Summer the water levels are so reduced that infiltration from the sea takes place and the salinity is greatly increased.

The Council runs three pumping stations and maintains Brackish Water reservoirs at Moorish Castle, Calpe High Level, Europa Road, Engineer Road, and Windmill Hill, which are situated at 210 feet, 345 feet, 208 feet, 410 feet, and 523 feet respectively above sea level.

From these reservoirs an intercommunicating system of distribution pipes conveys the water by gravitation to every house and the supply is constant.

The Council also pumps brackish water for War Department purposes to the very top of the Rock—a considerable lift.

During the year 1928 the quantity of brackish water pumped and distributed for all purposes was 220,893,300 gallons.

Improvements and renovations are constantly being effected in the brackish water service. During the year 1928 old and defective distributing mains have been relayed at Rosia Steps, Witham's Road, Library Ramp and Lower Castle Road; many extensions have been made and dead ends have been connected up to create better circulation, and numerous new control valves have been fixed, an innovation being the use of horizontal sluice valves.

The upkeep of mains, services, meters, etc., is costly owing to incrustation and corrosion.

The rate at which brackish water is sold to the public is 3½*d.* per 100 gallons.

(*c*) *Boiler Water.*

This water is pumped from very shallow wells at North Front and is sold at the price of 1/3 per 100 gallons.

The water is slightly saline and infiltration from the sea is not so marked as with Brackish Water.

The quantity supplied during the year 1928 was 2,272,400 gallons.

DRAINAGE AND SEWERAGE.

The whole of the sewage of Gibraltar eventually discharges into the sea at Europa Point. The main gravitation trunk sewer is 6′ 0″ by 4′ 6″ in size at the outfall and the average gradient is 1 in 1,200.

The sewage from the low lying Northern district is lifted to the main gravitating sewer by means of a series of Shone's Ejectors.

The quantity of sewage pumped during 1928 was 64,313,021 gallons.

In 1928 a scheme was developed and work commenced, on a foul drainage system for the low lying area near the Public Markets, hitherto undrained. The works which include the provision of an additional ejector station containing two Shone's Pneumatic Automatic Ejectors of one hundred gallons capacity each, have been difficult in construction due to the infiltration of water from the sea, especially during high tide. The system which is below sea level is not yet in operation but will shortly be so, and a sanitary improvement will result.

Numerous storms overflows exist in the line of the Main Sewer and come into operation in times of heavy floods. The configuration of the rock is such, that, very large volumes of storm water very quickly reach the lower levels and the sewers are taxed to the utmost. The rate of run off is abnormal, and during heavy rains boulders and much silt reaches the sewers.

Detritus intercepting pits have received attention during the year 1928; the item most worthy of mention in this respect being the enlargement and improvement of the catch-pit near the Alameda Gardens.

The existing Sewerage and Drainage system is maintained in good condition. Works of desilting the main sewer were continued in 1928 and efforts are made by continual inspection and cleansing to prevent silting to anything like the same extent as formerly, but the main sewer is not completely satisfactory in this respect.

Another portion of the old sewer in Main Street has been found defective and the renewal thereof will be undertaken in the summer of 1929.

Private house drains are tested and those found defective are relaid under notice.

REFUSE COLLECTION AND DISPOSAL.

Each house is required to be provided with a proper portable receptacle. House refuse is collected by the Council's employés once a day in winter and twice a day in summer. The refuse collected is conveyed principally by petrol driven Freighter Car with a low loading line, to the Council's Destructor situated at the North Front. This system of collection has lately been extended, an additional Freighter Car having been purchased in 1928.

The old system of mule drawn refuse carts has been practically superseded, there being only two carts in use at present, for such areas where their suppression is not feasible or economical.

Gibraltar is a very difficult district for refuse collection but the service is, notwithstanding, very well performed.

With the exception of a very small quantity collected from the upper portions of the Southern District which is tipped into the sea at Europa Point, the whole of the refuse collected is disposed of by incineration at the Council's Destructor.

This installation is an efficient and modern one comprising two complete duplicate two cell continuous grate incinerating units with subsidiary plant, buildings, &c.

Steam generated at the Destructor is utilized for disinfecting purposes at the Council's Disinfecting Station which is situated in close proximity to the Destructor Buildings.

STREET CLEANING AND SANITATION.

The main routes on the level are split up into small sections and one sweeper with orderly boy and hand cart is attached to each section. Street orderly bins are provided at strategic points to serve the orderly hand carts. All other routes are swept twice or thrice a day by travelling sweeper gangs. During the summer months additional sweeping of roads is effected at late hours.

Streets are well watered with brackish water several times every day by street watering valves and hoses with spreaders. The main thoroughfares are washed and scrubbed down with hoses under great pressure as required, and on occasions disinfectant is added. Street gullies receive special attention in summer when the water traps are renewed daily. The dust nuisance once so great is now practically non-existant, and the road surfaces are hygienic and sanitary due to the extensive use of tar and bituminous compounds which create waterproof surfaces. The prevalent humidity, and steep and narrow streets, makes the roads problem a very difficult one, but conditions were never so good as now.

The sides of many of the over steep narrow roads in Gibraltar have also been treated with tar or bitumen during 1928, leaving a small centre and treated track for animals. This has proved a success and has made them more sanitary and increased their resistance to wear, and storm wash out whilst still retaining some relative non-slippery qualities.

Another improvement effected in the sanitary condition of roads during the year 1928 has been the provision of a dressed stone surface channel along both sides of the entire length of Main Street. This improvement will ensure speedy disposal of surface water as the unchannelled sides of a tar macadam roadway in a very warm climate are apt to creep and to get uneven, and hold up filth.

The upper portion of Castle Steps was also improved, the cobbled surface being replaced by concrete paving treated with silicate of soda which has made these steps durable and sanitary. It is found that horse droppings, etc., show up more in bitumen surfaces and far more sweeping is demanded, although the quantities collected are less.

HIGHWAYS.

The Public Highways in Gibraltar have been brought up to and are maintained along most modern lines, though the problem is an exceptionally difficult one owing to the very hilly nature and climate and humidity.

Bitumen and tar compounds are used everywhere. Such forms of road construction are inclined to be slippery everywhere, given certain conditions, but in Gibraltar the humid Levanter winds add enormously to this difficulty.

Improvements from a traffic point of view are constantly being made. During 1928 improvements were effected at Commercial Square and also at Europa Road near Europa Pass.

The formation of a track for animals on the East side of the Inundation has been completed and is in use, and, in the early part of 1929 a part of the Inundation Road has been widened and the lay out of this road improved considerably.

The Council runs its own Steam and Petrol Rollers and Lorries, Stone Breakers, makes its own Tar Macadam, bricks, pipes, etc., and quarries about 12,000 tons of road metal per annum.

During 1928 two additional Motor Lorries were acquired and put in commission. Extra garages for Municipal vehicles were erected and an enclosed depot for road making materials was installed below King's Lines. A large new industry has been created by concrete block making.

PUBLIC BATHS.

The Council maintains public slipper baths, hot and cold at Irish Town, but they are not sufficiently patronized by the public.

The facilities for sea bathing afforded to the general public are, however, insufficient. A new sea bathing pavilion to take the place of two old existing bathing establishments, is in course of construction.

Sea bathing is also permitted at Catalan Bay, Sandy Bay, and Rosia Bay.

SANITARY CONVENIENCES.

Nearly all the many public Sanitary Conveniences are treated on modern lines and the City will bear comparison with any other town in this provision.

The Public Conveniences at Bayside were remodelled and improved during 1928. Three new latrines were provided outside the City, near the Eastern Beach, which locality has recently found favour with the public as a resort during summer evenings. There being no water carriage drainage system in the vicinity, these latrines are of the pail closet type.

DOG TROUGHS.

The Council provides and maintains Dog Troughs at frequent interval and in summer keeps them supplied three times a week with water for drinking.

FIRE STATION.

The Fire Brigade is under the control of the City Council which maintains a Fire Station, and Fire Fighting appliances which include a Motor Fire Tender, hydrants, hoses, fire escape ladders, pumps, &c.

HOUSING.

Housing in Gibraltar was very fully described in the Annual Report of 1927, and much time and consideration has since been given to this difficult problem.

Provision has now been made in the Colonial Estimates for the commencement of a Housing Scheme which, it is confidently hoped, will do much to solve the unsatisfactory housing conditions in Gibraltar.

Systematic house-to-house inspections.—During the year the following houses were inspected:—

Town—	Upper District	20
	Middle District...	60
	Lower District	30
South	... ...	11
North	... ...	—
	Total	121

New constructions, reconstructions, additions and repairs of an important nature carried out in Gibraltar during the year 1928.

	Freehold Property.	Crown Property.	War Department (in civil occupation).	Totals.
NEW CONSTRUCTIONS—				
Living rooms	3	12	—	15
Kitchens	2	2	—	4
Water closets	5	7	2	14
Bathrooms	2	—	—	2
Garages	1	—	—	1
Stores	—	—	1	1
Offices	1	—	—	1
Stables	—	1	—	1
CONVERSION OF :—				
1 room into 2	—	1	—	1
2 rooms into 1	1	—	—	1
2 kitchens into 1	1	—	—	1
Rooms into offices	2	—	—	2
Living room into kitchen	5	—	—	5
Living room into bathroom	3	—	—	3
Kitchen into living room	2	—	—	2
Kitchen into show room	1	—	—	1
Store into garage	2	—	—	2
Shop into garage	1	—	—	1
Stable into garage	2	—	—	2
Stable into workshop	1	—	—	1
Pitched roof into flat roof	1	—	—	1
Window into door	4	—	—	4
Provision of new window	3	1	—	4
Provision of washhouse	1	—	—	1
Provision of open area	3	—	—	3
Provision of skylight over open area	1	—	—	1
Provision of terrace	3	—	—	3
Enlargement of window	7	—	—	7
Erection of petrol pump	—	—	1	1
Minor alterations	13	6	1	20

	Increase.	Decrease.
Living rooms	9	—
Stables	—	2
Garages	6	—
Bathrooms	5	—
Kitchens	5	—
Washhouses	1	—
Water closets	14	—
Shops	—	—
Rooms (other than living rooms)	—	2
Stores	—	1
Factories and Workshops	1	—
Offices	3	—

DEFECTS FOUND.

	No.
Insufficient light and ventilation	19
Defective water fittings	8
Defective roofs	49
Defective eaves-gutters and downpipes	55
Defective drainage	9
Defects in water closets, water closet fittings, soil pipes, &c.	61
Defective paving	37
Defective wall plaster and woodwork	66
Dampness—	
Due to defective roofs	29
Other causes	5
Refuse receptacles, not provided, or of inadequate size	9
Premises dilapidated	2

SUMMARY OF WORK DONE BY SANITARY INSPECTORS DURING THE YEAR 1928.

COMPLAINTS RECEIVED:	
Written	16
Verbal	69
PREMISES INSPECTED:	
General inspection (systematic house-to-house)	121
Casual inspection	16
NUISANCES FOUND:	
Defective drains	80
Obstructed drains	128
Defective W.Cs.	100
Defective W.C. fittings	144
Defective water fittings	95
Defective rainwater pipes	56
Defective eaves-gutters	60
Defective roofs	51
Defective yard paving	36
Dampness	29
Premises dirty	33
Defective or no dust bin	75
Underground tank not insect proof	10
Suspected pollution of water in underground tank	23
Brackish water tank not insect proof or no cover	46
Brackish water running to waste	90
Samples of Food and Drugs taken for analysis	210
Premises disinfected for infectious disease	808
Premises disinfected for vermin, &c.	23
Stables disinfected	766
Articles disinfected at N.F. Disinfecting Station	9,815
Visits of enquiry re Infectious Diseases	1,076
Cases removed in Ambulance:	
Local	41
Bay	46
Visits to Milk-Shops	199
Visits to Eating Houses	162
Visits to Mineral Water Factories	126
Visits to Common Lodging Houses	71
Visits to premises on which notice for abatement of nuisances had been served and are revisited for the purpose of ascertaining if requirements are being complied with	1,467
Notices served in accordance with Vaccination Ordinance 1887	232
Legal Proceedings instituted	10
Foodstuffs, &c., condemned as unsound and further action taken	4
Street water fittings found defective	78
Defects found	1,134
Defects remedied	1,125
Pending on 31/12/28	9

REPORT OF THE VETERINARY ADVISER.

The general health of the animals in the Colony remains good, and during the year under review there has (with the exception of newly-imported slaughter cattle) been practically no infectious or contagious disease of any kind.

HORSES AND MULES.

Forty-nine horses and fifteen mules were imported by sea into the Colony during the year and were all examined on landing and found free from disease. Their countries of origin were :—

	Horses.	Mules.
England	5	—
Argentine	10	15
French Morocco	24	—
Tangier	5	—
Malta	5	—
Total	49	15

Horses and mules examined prior to export and their destination were :—

	Horses.	Mules.
England	7	—
Spain	19	15
Tangier	11	—
French Morocco	1	—
Portugal	2	—
Malta	2	—
Total	42	15

One case of Tetanus occurred in a civilian horse, the origin of which was obscure, as this disease is almost unknown in Gibraltar. This was the only case of infectious or contagious disease in either Army or Civil horses and mules during the year.

SLAUGHTER CATTLE.

The numbers imported with country of origin amounted to :—

	Cattle.	Sheep.	Pigs.
Spain	1	559	418
Morocco	5,621	3,430	660
Total	5,622	3,989	1,078

These were examined on landing and any found diseased were marked for slaughter as early as possible.

Practically no cattle arrived with broken limbs possibly owing to fewer severe storms than in former years, but also due to humane killers now being carried on the regular cattle boats whereby animals can be at once destroyed if injured during the voyage.

There was a severe outbreak of foot and mouth disease on the 3rd December, which originated from a consignment of 16 cattle arriving from Marseilles after first being transhipped at Tangier.

The disease was of a much more virulent type than that generally encountered in the Moroccan cattle and was characterised by unusually severe foot lesions. It quickly spread to 60 fat pigs in a neighbouring yard, all of which developed the disease in a severe form.

In spite of all precautions the disease spread to the ordinary Moroccan slaughter cattle which although coming from a country where the disease is endemic developed it in the severe form.

This outbreak was dealt with by the slaughter of all slaughter cattle, limiting imports to immediate needs and sending all imported cattle direct to the slaughter house, thus leaving the cattle sheds and grazing grounds empty for four weeks after disinfection.

Periodic cases of mild foot and mouth disease in cattle have occurred both before and after the above outbreak, which did not appear to harm the animals during life and were often only detected after slaughter.

They were of the mild form which appears to be endemic amongst Moroccan cattle generally affecting only the sides and back of the tongue, the foot seldom being involved.

In the outbreak from the French cattle, severe foot lesions occurred in both the French and later the Moroccan cattle.

It is of interest to note that although pigs and sheep are often in contact with these Moroccan Cattle which have foot and mouth disease, they practically never develop it, but where the pigs were in contact with the French form of the disease they developed it in a most severe form.

By restricting the movement of the cattle on landing to certain roads and buildings and prohibiting the movement of the cows and goats in the Colony (as in former years) no case occurred amongst any milch cows or goats in Gibraltar.

Whilst the supply of meat to Gibraltar is dependent on supplies from Morocco, foot and mouth disease will probably be continually encountered, and it would not be possible to prevent its introduction without prohibiting the import of cattle except from foot and mouth disease free countries.

The present policy is to destroy the parts affected and pass the remainder of the carcase for human consumption.

DOGS, CATS, &C.

The muzzling order is still in force, and no imports of dogs from a country not free from rabies is allowed.

There were no cases of rabies during the year.

Post mortem examinations were made on eight dogs, one cat and one monkey suspected to have died from rabies and the brains of eight of these animals were sent to the "Pasteur Institute" at Tangier for examination. All were reported negative. Negri bodies were found to be present in one, but subsequent animal inoculation gave negative results.

All dogs or cats biting any person in Gibraltar are sent to the "Isolation Kennels" for ten days and during the year 13 dogs and 7 cats underwent detention. Considering that the total number of licences taken out for dogs in the Colony only amounts to 331 the number of dogs bites appears to be excessively high.

The only dogs allowed into Spain (where rabies is endemic) are the hounds of the Royal Calpe Hunt, and these are inoculated yearly against rabies by the Japanese method with material supplied by the "Pasteur Institute," Tangier.

Quarantine Kennels are in the course of erection to enable dogs being imported from countries where rabies is endemic (*i.e.,* Spain, Egypt, etc.). This will be a great boon especially to the Army and Navy who up to now have been prohibited from bringing dogs with them from countries such as Egypt, India, &c.

MILCH CATTLE, GOATS AND DAIRIES.

All milch cattle, goats and dairies were inspected during the year and the animals found to be in good health.

I am of opinion, however, that legislation should be passed similar to the recent "Tuberculosis Order" in England, whereby only Tubercle free cows would be allowed in the Colony.

C. H. S. TOWNSEND,
Major, R.A.M.C.,
Veterinary Adviser to City Council.

COMMON LODGING HOUSES.

There is one Common Lodging House in Gibraltar.

It has been maintained in good sanitary condition during the year.

No case of infectious disease occurring in it has been brought to notice; there has been no overcrowding and the Bye-Laws have been strictly observed.

LIST OF ORDINANCES, BYE-LAWS AND REGULATIONS RELATING TO PUBLIC HEALTH IN FORCE IN GIBRALTAR.

ORDINANCES—

"The Public Health Ordinance, 1907," embodying the following sanitary provisions:—

- Sewerage and Drainage.
- Sanitary Conveniences.
- Scavenging and Cleansing.
- Water Supply.
- Provisions for the protection of Water.
- Regulation of Cellar Dwellings.
- Common Lodging Houses.
- Nuisances.
- Houses let in Lodgings and in separate Tenements.
- Offensive Trades.
- Unsound Meat, etc., Food and Drugs.
- Infectious Diseases—Provisions against Infection.
- Prevention of Epidemic Diseases.
- Mortuaries.

"The Vaccination Ordinance, 1887," providing for the compulsory vaccination of all children born in Gibraltar within three months after birth, and re-vaccination on attaining the age of 12 years.

"The Tobacco (Chopping) Ordinance, 1922," prohibiting the chopping of tobacco otherwise than by machinery.

"The Midwives Ordinance, 1907."

"The Quarantine Ordinance, 1895."

"The Diseases of Animals Ordinance, 1925."

BYE-LAWS—

Bye-Laws with respect to Nuisances, 1893.

Bye-Laws with respect to Buildings, 1893.

Bye-Laws for regulating the supply of Brackish Water for Flushing and Cleansing Purposes, 1905.

Bye-Laws for the Control of the Milk Supply.

Bye-Laws made for the purpose of prescribing and regulating the seizure, detention, etc,, of diseased cattle or animals, 1914.

Bye-Laws with respect to Nuisances, 1915.

Bye-Laws made for the prevention of danger arising to public health from the importation, etc., of ice cream, 1915.

Bye-Laws made for regulating the supply of water to water vendors and other persons, 1918.

Bye-Laws made for the prevention of danger arising to public health from the importation, preparation, etc., of food and drink intended for human consumption, 1918.

FOOD.

SUPERVISION OF FOOD SUPPLIES.

A considerable amount of work have been done during the year in carrying out inspections, sampling, etc. This work is most important having regard to the risks to health from contamination and adulteration of foodstuffs.

The general duties of food inspection are carried out by the Sanitary Inspectors, who also make inspections of premises where food is sold, stored or prepared and also act as inspectors, Sale of food and Drugs, "Public Health Ordinance, 1907."

GIBRALTAR MILK SUPPLY.

The bulk of the milk supply is imported goat's milk and is derived from sources over which the Council have no control.

Under the Bye-Laws for the control of the milk supply of Gibraltar this imported supply must be boiled in Gibraltar before retail.

This is the best safeguard that could be obtained and was considered in 1907 when it was introduced as a big step forward. This regulation has ensured that imported milk for local consumption has been sterilized before retail.

Locally produced milk is very limited in amount (about 15%) and the conditions under which it is produced are not ideal.

The daily consumption of milk in Gibraltar is approximately:—

COWS.	
Locally produced	156 pints per day.
Imported	70 ,,
GOATS.	
Locally produced	360 ,,
Imported	2,745 ,,
Total	3,331 pints or 416·3 gallons.

This shows a daily consumption of fresh milk of approximately 0·2 pints per person per day.

In addition to fresh milk, condensed tinned milk is used to the extent of over 1,000 tins a day.

All goats in Gibraltar are kept in a register and examined serologically for Undulant fever twice yearly.

No local goat has reacted to this disease for many years.

MILK SHOPS.

There are six registered milk shops in Gibraltar in addition to five stalls at the Public Markets for the sale of milk.

MILK VENDORS.

All milk vendors must be registered; there are at present 52 in the Register.

BAKEHOUSES.

There are eight bakehouses in Gibraltar which all conform to the Bye-Laws. The bread baked locally now includes the Spanish variety, but in addition about seven hundred and fifty pounds of Spanish bread is imported locally.

This imported bread has on examination been found to be quite wholesome.

BUTCHERS' SHOPS.

There are five butcher shops, three in the Town Area and two in the South. They have been kept in a satisfactory condition during the year.

ICE CREAM.

Is manufactured in three premises. Regular inspection of these premises have been carried out and conditions have been satisfactory.

HOTELS AND CAFES and premises where foodstuffs of various kinds were made or sold received routine inspections.

MARKETS AND SLAUGHTER HOUSES.

The renovation of the Public Markets in Gibraltar has now been taken in hand, a start being made with the meat market which is now being reconstructed on most modern lines.

Whilst this reconstruction is proceeding, temporary accommodation has been provided for the meat market in Casemates Barracks. This temporary accommodation has proved very suitable, being cool in the summer and free from flies.

SLAUGHTER HOUSES and surroundings have been kept in a satisfactory sanitary condition during the year. These premises are in a dilapidated condition and in need of renovation and the introduction of modern improvements.

This is at present under consideration.

The number of animals slaughtered during the year was as follows :—

Cattle	5,858
Sheep	4,018
Pigs...	1,184

During the year the opinion of the Inspector of Food was requisitioned on seventy-three occasions.

The following table shows the causes for which carcases or portion of carcases were condemned as unfit for human consumption, and ordered to be destroyed :—

CATTLE.

Disease.	*In whole.*	*In part.*
Tapeworm	11	54
Tuberculosis	2	—
Fever	6	—
Emaciation	2	—

SHEEP.

Emaciation	3	—

PIGS.

Nil.

FOOT AND MOUTH DISEASE.

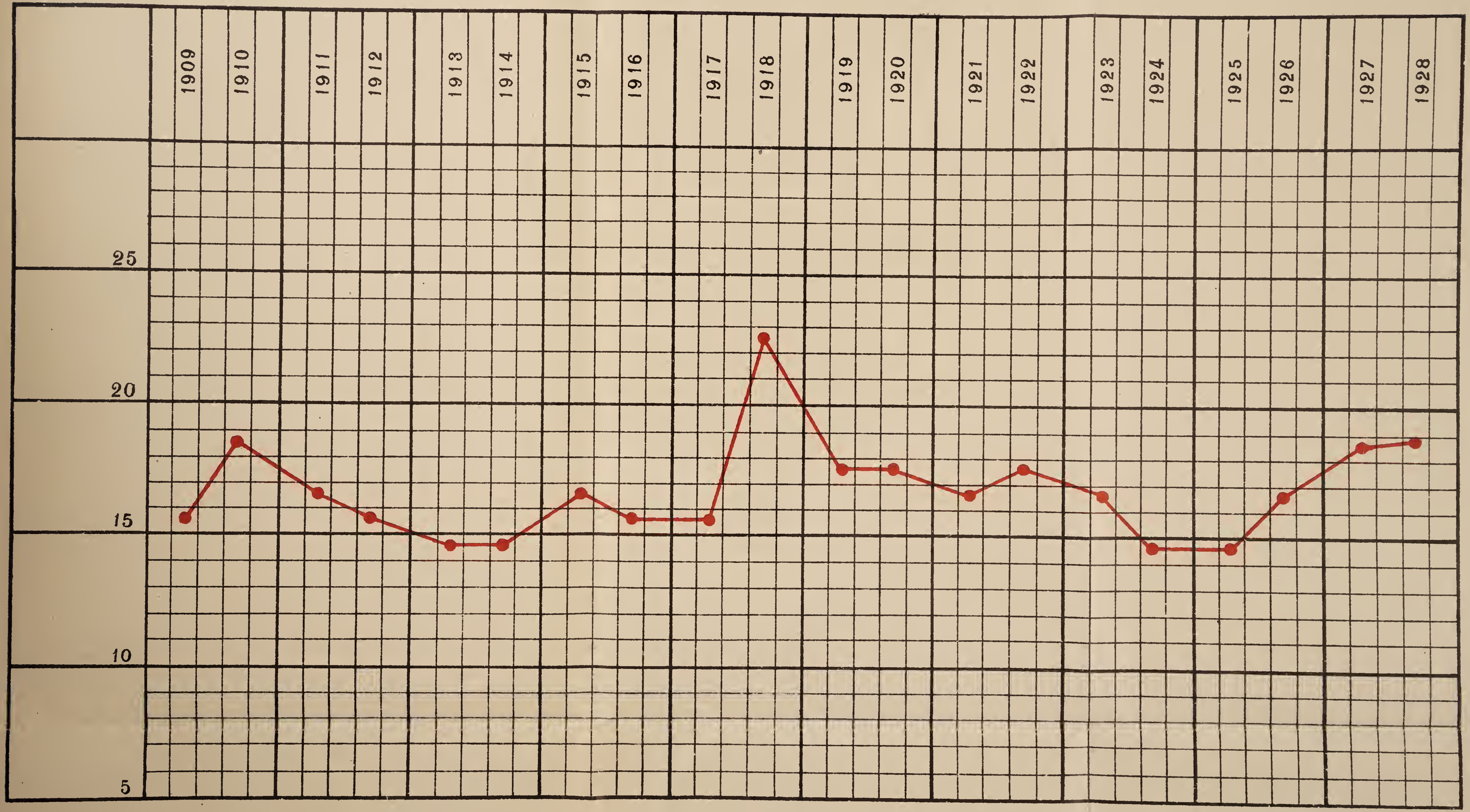
The following is a list of the parts of carcases destroyed :—

	Cattle.	*Pigs.*
Heads (complete)	82	—
Gums and Muzzles	63	—
Tongues	46	—
Feet	488	276
Paunches	101	70

AMOUNT OF SHIPPING ENTERING THE PORT OF GIBRALTAR DURING THE YEAR 1928.

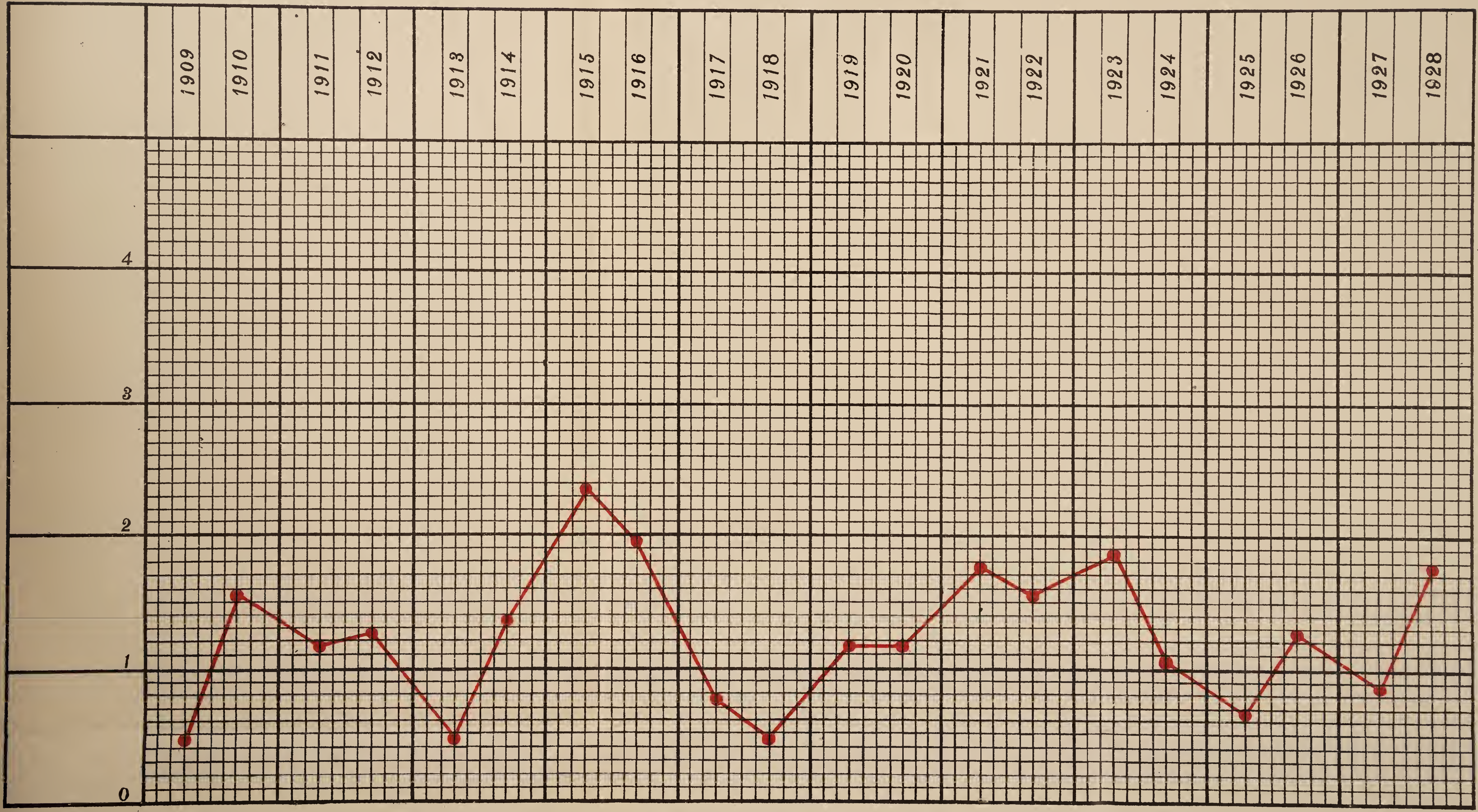
		Number.	Net Tonnage.	Number inspected.	Number left in quarantine.	Number admitted to Pratique.
British	Steam	1,422	3,809,007	4	—	4
	Sailing	26	3,184	—	—	—
Total British		1,448	3,812,191	4	—	4
Foreign	Steam	2,056	2,903,695	2	1	1
	Sailing	1,314	28,952	—	—	—
Total Foreign		3,370	2,932,647	2	1	1
Total British and Foreign		4,818	6,744,838	6	1	5

GENERAL DEATH RATE PER 1,000 OF POPULATION (TOTAL CIVIL), GIBRALTAR, FOR THE DECENNIAL PERIODS
1909-1918 and 1919-1928



Average	1909-1913	15.8	1919-1923	17.3
	1914-1918	17	1924-1928	16.7
	1909-1918	16.4	1919-1928	17

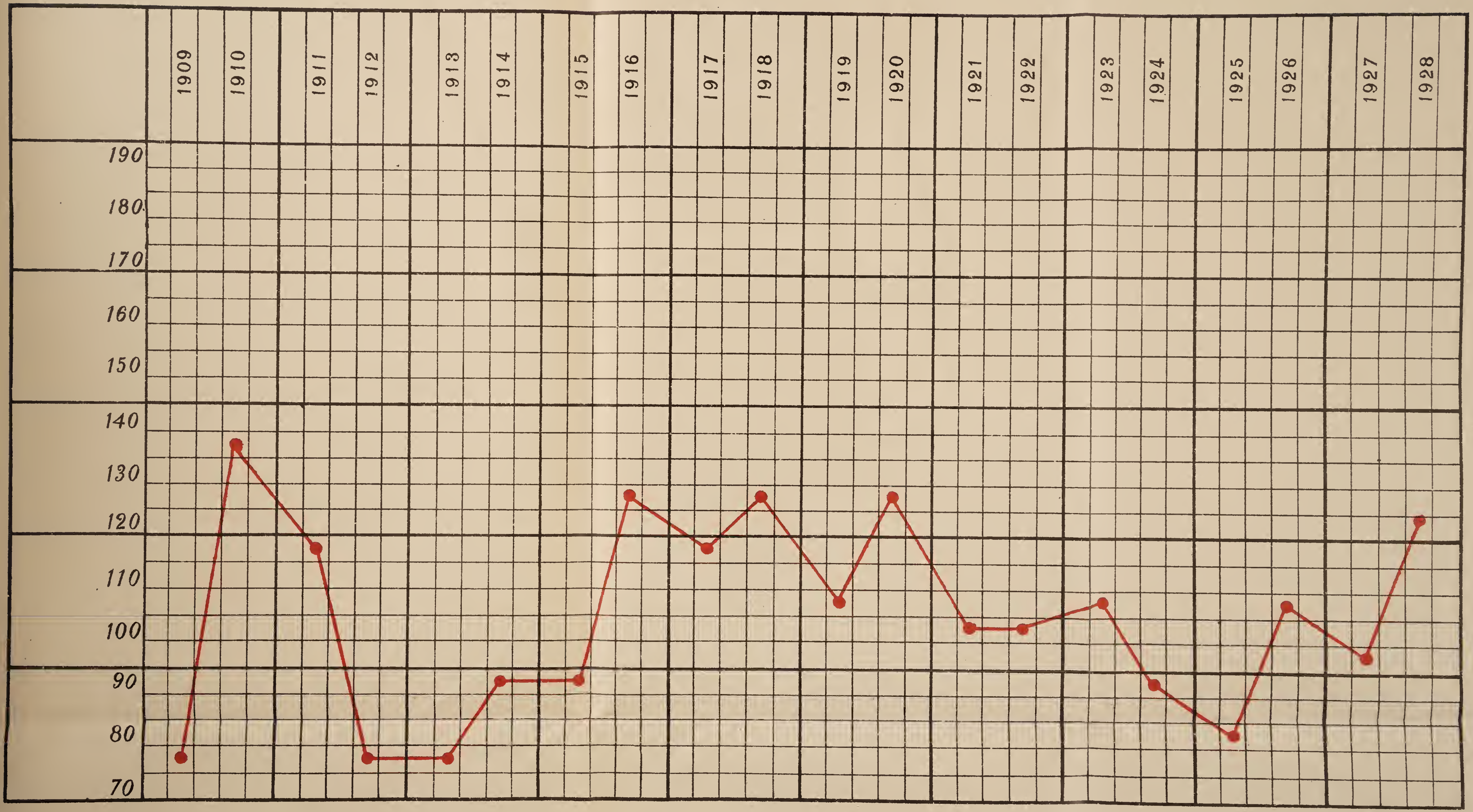
ZYMOTIC MORTALITY PER 1,000 OF TOTAL CIVIL POPULATION, GIBRALTAR, FOR THE DECENNIAL PERIODS 1909-1918 and 1919-1928



Average	1909-1913	.93	1919-1923	1.49
	1914-1918	1.26	1924-1928	1.07
	1909-1918	1.09	1919-1928	1.28

INFANTILE MORTALITY PER 1,000 BIRTHS, GIBRALTAR, FOR THE DECENNIAL PERIODS

1909-1918 and 1919-1928



Average	1909-1913	96.1	1919-1923	110.3
	1914-1918	109	1924-1928	100.7
	1909-1918	102.5	1919-1928	105.5